Dell™ XPS™ M2010 Service Manual

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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Model PP03X

June 2006 Rev. A00

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About Your XPS Computer

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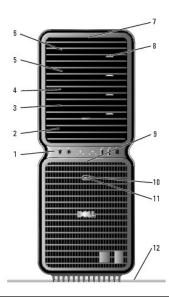
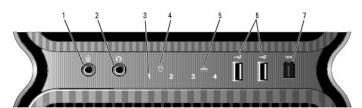
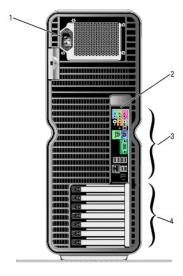
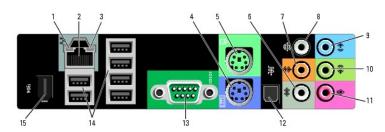
- Front View
- Back View

Front View

1	front I/O connectors	Plug USB and other devices into the appropriate connectors (see Front I/O Connectors).
2	3.5-inch drive bays (2)	Can hold an optional Media Card Reader or floppy drive.
3-6	5.25-inch drive bays (4)	Can hold a CD/DVD drive, or a SATA hard drive in a 5.25-inch drive bay carrier. **NOTE:** The hard-drive carrier is only for use in the 5.25-inch drive bays. The floppy-drive/Media Card Reader and hard-drive carriers are not interchangeable.
7	front panel LEDs (4)	Multi-colored lights provide illumination for the front of the computer. **NOTE:** The color of the front panel LEDs can be adjusted in system setup (see System Setup).
8	CD/DVD drive tray eject button (4)	Use to eject the drive tray of a CD/DVD drive. **NOTE:** The CD/DVD drive tray eject button is not a handle. The self-tending doors open automatically when the eject button is pressed and the drive tray is ejected.
9	front panel LEDs (4)	Multi-colored lights provide illumination for the front of the computer. **NOTE:** The color of the front panel LEDs can be adjusted in system setup (see System Setup).
10	power button	Press to turn on the computer. **NOTICE:** To avoid losing data, do not use the power button to turn off the computer. Instead, perform an operating system shutdown. **NOTE:** The power button can also be used to wake the system or to place it into a power-saving state (see "Power Management" in your

		Owner's Manual).
11	power light	The power light illuminates and blinks or remains solid to indicate different states: ○ No light — The computer is turned off. ○ Steady green — The computer is in a normal operating state. ○ Blinking green — The computer is in a power-saving state. ○ Steady amber — There may be a problem with an installed device. ○ Blinking amber — An internal power problem may exist.
12	computer stand	Attach the computer stand to provide stability to the system. **CAUTION: The computer stand should be installed at all times to ensure maximum system stability. Failure to install the stand could result in the computer tipping over, potentially resulting in bodily injury or damage to the computer.**

Front I/O Connectors

1	microphone connector	Use the microphone connector to attach a personal computer microphone for voice or musical input into a sound or telephony program.
2	headphone connector	Use the headphone connector to attach headphones.
3	diagnostic lights (4)	Use the sequence of these diagnostics lights to help troubleshoot a problem with your computer (see Diagnostic Lights).
4	hard-drive activity light	The hard drive light is on when the computer reads data from or writes data to the hard drive. The light may also be on when a device such as your CD player is operating.
5	network link light	The network link light is on when a good connection exists between a network and the computer.
6	USB 2.0 connectors (2)	Use the front USB connectors for devices that you connect occasionally, such as flash memory keys, cameras, or bootable USB devices. For more information on bootable USB devices see Boot Sequence. It is recommended that you use the back USB connectors for devices that typically remain connected, such as printers and keyboards.
7	IEEE 1394 connector	Use the IEEE 1394 connector for high-speed data devices such as digital video cameras and external storage devices.

Back View

1	power connector	Insert the power cable. The appearance of this connector may differ from what is pictured.
2	back panel LEDs (2)	Multi-colored lights provide illumination for the I/O panel on the back of the computer. **NOTE:** The color of the back panel LEDs can be adjusted in system setup (see System Setup).
3	back I/O connectors	Plug serial, USB, and other devices into the appropriate connectors (see Back I/O Connectors).
4	card slots	Access connectors for any installed PCI or PCI Express cards. **NOTE:** Some connector slots support full-length cards.

Back I/O Connectors

1	link integrity light	- Green — A good connection exists between a 10-Mbps network and the computer. - Orange — A good connection exists between a 100-Mbps network and the computer. - Yellow — A good connection exists between a 1000-Mbps (1-Gbps) network and the computer. - Off — The computer is not detecting a physical connection to the network.
2	network adapter connector	**NOTICE:** Do not plug a telephone cable into the network adapter connector. Use the network adapter connector to attach your computer to a network or broadband device. Connect one end of a network cable to either a network jack or your network or broadband device, and then connect the other end of the network cable to the network adapter connector on your computer. A click indicates that the network cable has been securely attached. On computers with an additional network connector card, use the

		connectors on the card and on the back of the computer when setting up multiple network connections (such as a separate intra- and extranet). **NOTE:** It is recommended that you use Category 5 wiring and connectors for your network. If you must use Category 3 wiring, force the network speed to 10 Mbps to ensure reliable operation.
3	network activity light	Flashes a yellow light when the computer is transmitting or receiving network data. A high volume of network traffic may make this light appear to be in a steady "on" state.
4	keyboard connector	Plug a standard PS/2 keyboard into the purple keyboard connector. Turn off the computer and any attached devices before you connect a keyboard to the computer. If you have a USB keyboard, plug it into a USB connector.
5	mouse connector	Plug a standard PS/2 mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector.
6	side surround sound connector	Use the (silver) side surround connector to attach additional speakers.
7	center subwoofer/LFE connector	Use the (orange) subwoofer connector to attach a single subwoofer. **NOTE:** The LFE (Low Frequency Effects) Audio channel, found in digital surround sound audio schemes, carries only low frequency information of 80 Hz and below. The LFE channel drives a subwoofer to provide extremely low bass extension. Systems not using subwoofers can shunt the LFE information to the main speakers in the surround sound setup.
8	surround sound connector	Use the (black) surround sound connector to attach multichannel-capable speakers.
9	line-in connector	Use the (blue) line-in connector to attach a record/playback device such as a cassette player, CD player, or VCR. On computers with a sound card, use the connector on the card.
10	line-out/headphone connector	Use the (green) line-out connector to attach headphones and speakers with integrated amplifiers. On computers with a sound card, use the connector on the card.
11	microphone connector	Use the (pink) microphone connector to attach a personal computer microphone for voice or musical input into a sound or telephony program.
12	S/PDIF connector	Use the S/PDIF connector to transmit digital audio without going through an analog audio conversion process.
13	serial connector	Connect a serial device, such as a handheld device, to the serial port. If necessary, the address for this port can be modified through system setup (see System Setup).
14	USB 2.0 connectors (6)	Use the back USB connectors for devices that typically remain connected, such as printers and keyboards. **NOTE:** It is recommended that you use the front USB connectors for devices that you connect occasionally, such as flash memory keys, cameras, or bootable USB devices.
15	IEEE 1394 connector	Use the IEEE 1394 connector for high-speed data devices such as digital video cameras and external storage devices.

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Advanced Troubleshooting

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Power Lights

 CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

The power button light located on the front of the computer illuminates and blinks or remains solid to indicate different states:

- If the power light is green and the computer is not responding, see Diagnostic Lights.
- If the power light is blinking green, the computer is in standby mode. Press a key on the keyboard, move the mouse, or press the power button to resume normal operation.
- If the power light is off, the computer is either turned off or is not receiving power.
  - Reseat the power cable into both the power connector on the back of the computer and the electrical outlet.
  - If the computer is plugged into a power strip, ensure that the power strip is plugged into an electrical outlet and that the power strip is turned on.
  - Bypass power protection devices, power strips, and power extension cables to verify that the computer turns on properly.
  - Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
  - Ensure that the main power cable and front panel cable are securely connected to the system board (see System Board Components).
- If the power light is blinking amber, the computer is receiving electrical power, but an internal power problem might exist.
  - Ensure that the voltage selection switch is set to match the AC power at your location, if applicable.
  - Ensure that the processor power cable is securely connected to the system board (see System Board Components).
- If the power light is steady amber, a device may be malfunctioning or incorrectly installed.
  - Remove and then reinstall the memory modules (see Memory).
  - Remove and then reinstall any cards (see Cards).
- Eliminate interference. Some possible causes of interference are:
  - Power, keyboard, and mouse extension cables
  - Too many devices on a power strip
  - Multiple power strips connected to the same electrical outlet

Diagnostic Lights

 CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

To help troubleshoot a problem, your computer has four lights labeled 1, 2, 3, and 4 on the front panel (see Front View). When the computer starts normally, the lights flash before turning off. If the computer malfunctions, the sequence of the lights help to identify the problem.

NOTE: After the computer completes POST, all four lights turn off before booting to the operating system.

Light Pattern	**Problem Description**	**Suggested Resolution**
	The computer is in a normal *off* condition or a possible pre-BIOS failure has occurred. The diagnostic lights are not lit after the system successfully boots to the operating system.	- Plug the computer into a working electrical outlet (see "Power Problems" in your *Owner's Manual*). - If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).
	A possible processor failure has occurred.	- Reseat the processor (see Processor). - If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).

1 2 3 4	Memory modules are detected, but a memory failure has occurred.	• If two or more memory modules are installed, remove the modules (see Removing Memory), then reinstall one module (see Installing Memory) and restart the computer. If the computer starts normally, continue to install additional memory modules (one at a time) until you have identified a faulty module or reinstalled all modules without error. • If available, install working memory of the same type into your computer (see Installing Memory). • If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).
1 2 3 4	A possible graphics card failure has occurred.	• Reseat any installed graphics cards (see Cards). • If available, install a working graphics card into your computer. • If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).
1 2 3 4	A possible floppy drive or hard drive failure has occurred.	Reseat all power and data cables.
1 2 3 4	A possible USB failure has occurred.	Reinstall all USB devices and check all cable connections.
1 2 3 4	No memory modules are detected.	• If two or more memory modules are installed, remove the modules (see Removing Memory), then reinstall one module (see Installing Memory) and restart the computer. If the computer starts normally, continue to install additional memory modules (one at a time) until you have identified a faulty module or reinstalled all modules without error. • If available, install working memory of the same type into your computer (see Installing Memory). • If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).
1 2 3 4	Memory modules are detected, but a memory configuration or compatibility error has occurred.	• Ensure that no special requirements for memory module/connector placement exist (see Memory). • Ensure that the memory you are using is supported by your computer (see Memory). • If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).
1 2 3 4	A possible expansion card failure has occurred.	1. Determine if a conflict exists by removing an expansion card (not a graphics card) and restarting the computer (see Removing PCI and PCI Express Cards). 2. If the problem persists, reinstall the card you removed, then remove a different card and restart the computer. 3. Repeat this process for each expansion card installed. If the computer starts normally, troubleshoot the last card removed from the computer for resource conflicts (see "Resolving Software and Hardware Incompatibilities" in your *Owner's Manual*). 4. If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).
1 2 3 4	Another failure has occurred.	• Ensure that all hard drive and CD/DVD drive cables are properly connected to the system board (see System Board Components). • If there is an error message on the screen identifying a problem with a device (such as the floppy drive or hard drive), check the device to make sure it is functioning properly. • If the operating system is attempting to boot from a device (such as the floppy drive or CD/DVD drive); check system setup (see System Setup) to ensure the boot sequence is correct for the devices installed on your computer. • If the problem persists, contact Dell (see "Contacting Dell" in your *Owner's Manual*).

Beep Codes

Your computer might emit a series of beeps during start-up if the monitor cannot display errors or problems. This series of beeps, called a beep code, identifies a problem. For example, beep code 1-3-1 (one possible beep code) consists of one beep, a burst of three beeps, and then one beep. This beep code tells you that the computer encountered a memory problem.

Reseating the memory modules may correct the following beep code errors. If the problem persists, see "Contacting Dell" in your *Owner's Manual* for instructions on obtaining technical assistance.

Code	**Cause**
1-3-1 through 2-4-4	Memory not being properly identified or used
4-3-1	Memory failure above address 0FFFFh

If you experience any of the following beep code errors, see "Contacting Dell" in your *Owner's Manual* for instructions on obtaining technical assistance.

Code	**Cause**
1-1-2	Microprocessor register failure
1-1-3	NVRAM
1-1-4	ROM BIOS checksum failure
1-2-1	Programmable interval timer
1-2-2	DMA initialization failure
1-2-3	DMA page register read/write failure
3-1-1	Slave DMA register failure
3-1-2	Master DMA register failure

3-1-3	Master interrupt mask register failure
3-1-4	Slave interrupt mask register failure
3-2-2	Interrupt vector loading failure
3-2-4	Keyboard Controller Test failure
3-3-1	NVRAM power loss
3-3-2	NVRAM configuration
3-4-1	Screen initialization failure
3-4-2	Screen retrace failure
4-2-1	No time tick
4-2-2	Shutdown failure
4-2-3	Gate A20 failure
4-2-4	Unexpected interrupt in protected mode
4-3-3	Timer-chip counter 2 failure
4-3-4	Time-of-day clock stopped
4-4-1	Serial or parallel port test failure
4-4-4	Cache test failure

System Messages

 NOTE: If the message you received is not listed in the table, see the documentation for either the operating system or the program that was running when the message appeared.

Message	Possible Cause	Corrective Action
8042 Gate-A20 error	The keyboard controller failed its test.	If you receive this message after you make changes in the system setup program, enter the system setup program and restore the original value(s).
Address Line Short!	An error in the address decoding circuitry in the memory has occurred.	Reseat the memory modules (see Memory).
C: Drive Error C: Drive Failure	The hard drive is not working or is not configured correctly.	Ensure that the hard drive is installed correctly in the computer (see Hard Drive) and defined correctly in the system setup program (see System Setup).
Cache Memory Bad, Do Not Enable Cache	The cache memory is not operating.	See "Contacting Dell" in your *Owner's Manual* for instructions on obtaining technical assistance.
CH-2 Timer Error	An error is occurring on the timer on the system board.	See "Contacting Dell" in your *Owner's Manual* for instructions on obtaining technical assistance.
CMOS Battery State Low CMOS Checksum Failure CMOS System Options Not Set CMOS Display Type Mismatch CMOS Memory Size Mismatch CMOS Time and Date Not Set	The system configuration information in the system setup program is incorrect or the battery charge may be low.	Enter the system setup program (see Entering System Setup), verify the system configuration, and then restart the computer.
Diskette Boot Failure	Drive A or B is present but has failed the BIOS POST.	Ensure that the drive is installed correctly in the computer (see Drives) and defined correctly in the system setup program (see System Setup). Check the interface cable at both ends.
DMA Error DMA 1 Error DMA 2 Error	Error in the DMA controller on the system board.	The keyboard or system board may need to be replaced.
FDD Controller Failure	The BIOS cannot communicate with the floppy drive or hard drive	Ensure that the floppy drive or the hard drive is installed correctly in the computer (see Drives) and defined correctly in the

HDD Controller Failure	controller.	system setup program (see System Setup). Check the interface cable at both ends.
INTR1 Error INTR2 Error	An interrupt channel on the system board failed to POST.	The keyboard or system board may need to be replaced.
Invalid Boot Diskette	The operating system cannot be located on drive A or drive C.	Enter the system setup program (see Entering System Setup) and confirm that drive A or drive C is properly identified.
Keyboard Error	The BIOS has detected a stuck key.	Ensure that nothing is resting on the keyboard; if a key appears to be stuck, carefully pry it up. If the problem persists, you may need to replace the keyboard.
KB/Interface Error	An error occurred with the keyboard connector.	Ensure that nothing is resting on the keyboard; if a key appears to be stuck, carefully pry it up. If the problem persists, you may need to replace the keyboard.
No ROM Basic	The operating system cannot be located on drive A or drive C.	Enter the system setup program (see Entering System Setup) and confirm that drive A or drive C is properly identified.

Dell Diagnostics

 CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in "Solving Problems" in your *Owner's Manual* and run the Dell Diagnostics before you contact Dell for technical assistance.

 NOTE: The Dell Diagnostics only operate on Dell computers.

Run Dell Diagnostics from your hard drive or from the *Drivers and Utilities* CD (*ResourceCD*).

Starting the Dell Diagnostics From Your Hard Drive

1. Turn on (or restart) your computer.

2. When the DELL logo appears, press <F12> immediately.

   NOTE: Keyboard failure may result when a key is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals to open the **Boot Device Menu**.

   NOTE: If at any time a message appears stating that no diagnostics utility partition has been found, run the Dell Diagnostics from your *Drivers and Utilities* CD (see Starting the Dell Diagnostics From the Drivers and Utilities CD).

   If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop, then shut down your computer and try again.

3. At the **Boot Device Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight **Boot to Utility Partition**, and then press <Enter>.

   NOTE: The Quickboot feature changes the boot sequence for the current boot only. Upon restart, the computer boots according to the boot sequence specified in system setup.

4. At the Dell Diagnostics **Main Menu**, left-click with the mouse, or press <Tab> and then <Enter>, to select the test you want to run (see Dell Diagnostics Main Menu).

   NOTE: Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.

5. After all tests have completed, close the test window to return to the Dell Diagnostics **Main Menu**.

6. Close the **Main Menu** window to exit the Dell Diagnostics and restart the computer.

Starting the Dell Diagnostics From the Drivers and Utilities CD

1. Turn on your computer.

2. Press the eject button on the front of the computer (see Front View) to open the drive tray.

3. Place the *Drivers and Utilities* CD in the center of the drive tray, then press the eject button or gently push on the tray to close it.

4. Restart the computer.

5. When the DELL logo appears, press <F12> immediately.

    NOTE: Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals until the **Boot Device Menu** appears.

   If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop, then shut down your computer and try again.

6. At the **Boot Device Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight **Onboard or USB CD-ROM**, and then press <Enter>.

   NOTE: The Quickboot feature changes the boot sequence for the current boot only. Upon restart, the computer boots according to the boot sequence specified in system setup.

7. At the **CD-ROM Startup Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight **Boot from CD-ROM**, and then press <Enter>.

   If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop, then shut down your computer and try again.

8. Press <1> to select the Dell Diagnostics.

9. At the **Dell Diagnostics Menu** press <1> to select the Dell Diagnostics for ResourceCD (graphical user interface).

10. At the Dell Diagnostics **Main Menu**, left-click with the mouse, or press <Tab> and then <Enter>, to select the test you want to run (see Dell Diagnostics Main Menu).

    NOTE: Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.

11. After all tests have completed, close the test window to return to the Dell Diagnostics **Main Menu**.

12. Remove the *Drivers and Utilities* CD, then close the **Main Menu** window to exit the Dell Diagnostics and restart the computer.

Dell Diagnostics Main Menu

The following tests can be run from the Dell Diagnostics **Main Menu**:

Option	**Function**
Express Test	Performs a quick test of system devices. The test typically takes 10 to 20 minutes and requires no interaction on your part. Run **Express Test** first to increase the possibility of tracing the problem quickly.
Extended Test	Performs a thorough check of system devices. The test typically takes an hour or more and peridocially requires your input to answer specific questions.
Custom Test	Tests a specific device in the system and can be used to customize the tests you want to run.
Symptom Tree	Lists a number of common symptoms and allows you to select a test based on the symptom of the problem you are having.

For any problem encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description exactly as it appears and follow the instructions on the screen. If you cannot resolve the problem, contact Dell (see "Contacting Dell" in your *Owner's Manual*).

 NOTE: The Service Tag for your computer is located at the top of each test screen. When contacting Dell support, have your Service Tag ready.

The following tabs provide additional information for tests run from the **Custom Test** or **Symptom Tree** option:

Tab	**Function**
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and any requirements for running the test.
Configuration	Displays the hardware configuration for the selected device.

(Custom Test only)	The Dell Diagnostics obtains configuration information for all devices from system setup, memory, and various internal tests, and it displays the information in the device list in the left pane of the screen. **NOTE:** The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters (Custom Test only)	Allows you to customize the test, if applicable, by changing the test settings.

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Computer Base

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CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

Replacing the Computer Base

The computer base includes cables for the microphone and the keyboard. If you need to replace the computer base, follow all the instructions for removing the system board assembly (see System Board Assembly) and install all system components into the new computer base.

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Before You Begin

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Getting Started

This chapter provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that a component can be replaced by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require one or more of the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Flash BIOS update (see the Dell support website at **support.dell.com**)

Preparing to Work Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help ensure your own personal safety.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: To reduce the risk of fire, electric shock, or injury, do not overload an electrical outlet, power strip, or convenience receptacle. The total ampere rating of all products plugged into an electrical outlet, power strip, or other receptacle should not exceed 80 percent of the branch circuit rating.

CAUTION: Your computer is heavy and can be difficult to maneuver. Seek assistance before attempting to lift, move, or tilt the computer and always lift correctly to avoid injury; avoid bending over while lifting.

NOTICE: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

NOTICE: Handle components and cards with care. Do not touch the components or contacts on a card. Instead, hold a card by its edges or by its metal mounting bracket. Hold a component such as a microprocessor by its edges, not by its pins.

NOTICE: When disconnecting a cable, pull on the cable's connector or its strain-relief loop, not on the cable itself. Some cables have connectors with locking tabs; before disconnecting this type of cable, press inward on the locking tabs to release the connector. When connecting or disconnecting a cable, ensure that the connectors are correctly oriented and aligned to avoid damage to the connector and/or the connector's pins.

1. Ensure that the work surface is level and protected to prevent either the surface or the computer from being scratched.

NOTICE: To avoid losing data, save any work in progress and exit all open programs before turning off your computer.

2. Turn off the computer and all attached devices:
   a. Click **Start**, then click **Turn Off Computer**.
   b. In the **Turn off computer** window, click **Turn off**.

   The computer performs a shutdown of the operating system, and then turns off.

   NOTE: Ensure that the computer is off and not in a power management mode. If you cannot shut down the computer using the operating system, press and hold the power button for 4 seconds.

3. Disconnect the computer and all attached devices from their electrical outlets.

NOTICE: When disconnecting a network cable, first unplug the cable from your computer and then unplug it from the network port or device.

4. Disconnect all external cables from the computer.

5. Carefully, lift the rear of the computer and rotate the stabilizing feet into the closed position.

6. With the help of an assistant, carefully lay the computer down on a flat surface with the computer cover facing up.

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Before You Begin

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This section provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in Turning Off Your Computer and Before Working Inside Your Computer.
- You have read the safety information in the Dell™ *Product Information Guide*.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe
- Flash BIOS update program CD

Turning Off Your Computer

NOTICE: To avoid losing data, save and close any open files and exit any open programs before you turn off your computer.

1. Shut down the operating system:

   Save and close any open files, exit any open programs, click **Start**→ **Shut Down**→ **Shut down**.

   The computer turns off after the operating system shutdown process finishes.

2. Ensure that the computer and any attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for four seconds.

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help ensure your own personal safety.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

NOTICE: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

NOTICE: Unless otherwise noted, each procedure in this document assumes that a part can be replaced by performing the removal procedure in reverse order.

NOTICE: When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTICE: To help prevent damage to the computer, perform the following steps before you begin working inside the computer.

1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.

2. Turn off your computer (see Turning Off Your Computer).

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network device.

3. Disconnect any telephone or network cables from the computer.

4. Disconnect your computer and all attached devices from their electrical outlets.

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

5. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

6. Turn the computer upside-down on a flat work surface.

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

7. Remove the system battery.

   a. Slide the battery latch release on the bottom of the computer in the direction of the #1 arrow. The access door will pop up.

1	access door	2	battery latch release		

   b. Using your thumbs, slide the battery in the direction of the #2 arrow by inserting one thumb into the recess next to the battery access door and the other thumb into the indention surrounding the #2 arrow.

   c. Lift the battery straight up and out of the computer.

Replacing the System Battery

1. Press the release latch on the battery to open the access door.

2. Insert the battery straight down into the battery bay.

3. Slide the battery in the direction of the #1 arrow until it snaps into place.

4. Close the access door, next to the #1 arrow, on the battery.

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Internal Card With Bluetooth Wireless Technology

Dell™ XPS™ M2010 Service Manual

 CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Internal Card with Bluetooth Wireless Technology

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. With the computer still turned over, remove the subwoofer cover (see Removing the Subwoofer).
3. The internal card with Bluetooth wireless technology is adhered to the subwoofer. To remove the card, pry it off the subwoofer, and disconnect the cable attached to the card.

1	subwoofer	2	internal card with Bluetooth wireless technology	3	cable connected to the internal card

---

Replacing the Internal Card with Bluetooth Wireless Technology

 NOTE: The internal card with Bluetooth wireless technology is adhered to the subwoofer. To replace the card, you will need to pry it from the subwoofer and adhere a new card.

1. Connect the cable to the new internal card with Bluetooth wireless technology.
2. Adhere the new internal card with Bluetooth wireless technology to the subwoofer.
3. Replace the subwoofer cover (see Replacing the Subwoofer).
4. Replace the system battery (see Replacing the System Battery).

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Camera

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTICE: The camera is very fragile. When servicing the camera, be careful not to grab the camera as the glass in the camera can easily break.

Removing the Camera

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. To access the camera, follow the instructions for removing the black display bezel and the silver display inlay (see Removing the LCD Panel).
5. Disconnect the camera cable from the connector on the display.
6. Remove the five M2 x 3-mm screws that attach the camera and cable to the top of the display.

1	display	2	camera cable	3	M2 x 3-mm screws (5)
4	camera				

Replacing the Camera

1. Attach the new camera and cable to the top of the display with five M2 x 3-mm screws.
2. Connect the camera cable to the connector on the display.
3. Follow the instructions for replacing the silver display inlay and the black display bezel (see Replacing the LCD Panel).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

4. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
5. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Mini Card

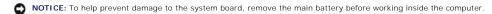
Dell™ XPS™ M2010 Service Manual

 Removing a Mini Card
 Replacing a Mini Card

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

CAUTION: Only products approved for use in your portable computer may be installed.

 NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing a Mini Card

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.

2. With the computer still turned over, remove the memory module cover (see Removing the Memory Module Cover).

3. Disconnect the antenna cables from the mini card.

1	antenna cables	2	mini card	3	system board connector

4. Release the card by pulling back on the metal securing tabs until the card pops up.

1	mini card	2	metal securing tabs (2)		

5. Lift the card out of its connector.

Replacing a Mini Card

NOTICE: To avoid damaging the card, ensure that the antenna cable is not under the card when you click the card into place.

NOTICE: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors and realign the card.

1. Align the card with the system board connector at a 45-degree angle, and press down to insert the card into the connector.

2. Connect the antenna cables to the antenna connectors on the mini card. Connect the white cable to the connector with the white arrow, and connect the black cable to the connector with the black arrow.

   NOTE: If your computer has a gray cable, connect it to the connector with the gray arrow if one is available on your card.

1	white arrow	2	black arrow	3	antenna cables
4	mini card				

3. Replace the memory module cover (see Replacing the Memory Module).

4. Replace the system battery (see Replacing the System Battery).

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Coin-Cell Battery

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Coin-Cell Battery

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. With the computer still turned over, remove the memory module cover (see Removing the Memory Module Cover).
3. Use a small plastic scribe to carefully lift one side of the battery out of the compartment.

1	small plastic scribe	2	coin-cell battery	3	battery compartment

4. Lift the battery out of the battery compartment.

Replacing the Coin-Cell Battery

1. With the positive side up, insert an edge of the coin-cell battery under the lip of the compartment.
2. Carefully press the coin-cell battery into the compartment, being careful not to break the plastic.
3. Replace the memory module cover (see Removing the Memory Module Cover).
4. Replace the system battery (see Replacing the System Battery).

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Cosmetic Covers

Dell™ XPS™ M2010 Service Manual

CAUTION: Before performing the following procedures, follow the safety instructions in your *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Cosmetic Covers

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Insert a small, flat-blade screwdriver into the slot on the back right corner of the computer, and press the screwdriver in firmly all the way.
5. While holding the screwdriver in, use the notch on the edge of the cosmetic cover to lift the cover up off the computer.

1	notch	2	cosmetic cover	3	access slot

6. Repeat step 4 and step 5 to remove the left cosmetic cover.

Replacing the Cosmetic Covers

1. Insert a small, flat-blade screwdriver into the slot on the back right corner of the computer, and press the screwdriver in firmly all the way.
2. While holding the screwdriver in, align the tabs on the bottom of the cosmetic cover with the notches in the top cover.
3. Gently push the cosmetic cover down and release the screwdriver.
4. Repeat step 1 through step 3 to replace the left cosmetic cover.

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

5. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
6. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Processor Module

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Processor Module

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in [Before Working Inside Your Computer](#), including removing the system battery.
2. Turn the computer over and open the display (see [Opening the Display](#)).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see [Removing the Cosmetic Covers](#)).
5. Remove the top cover (see [Removing the Top Cover](#)).
6. Remove the left hard drive (see [Removing a Hard Drive](#)).

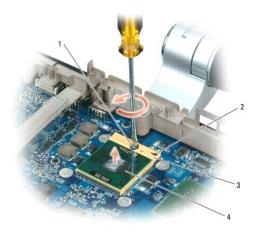
NOTICE: To ensure maximum cooling for the processor, do not touch the heat transfer areas on the processor thermal-cooling assembly. The oils in your skin reduce the heat transfer capability of the thermal pads.

7. Remove the processor thermal-cooling assembly (see [Removing the Processor Thermal-Cooling Assembly](#)).

NOTE: The ZIF-socket cam screw secures the processor to the system board.

NOTICE: Do not touch the processor die. Press and hold the processor down on the substrate on which the die is mounted while turning the cam screw to prevent intermittent contact between the cam screw and processor.

NOTICE: To avoid damage to the processor, hold the screwdriver so that it is perpendicular to the processor when turning the cam screw.

8. To loosen the ZIF socket, use a small, flat-blade screwdriver and rotate the ZIF-socket cam screw counterclockwise until it comes to the cam stop.

1	ZIF-socket cam screw	2	pin-1 corner of microprocessor	3	ZIF-socket
4	processor module				

NOTICE: When removing the processor module, pull the module straight up. Be careful not to bend the pins on the processor module.

9. Lift the processor module from the ZIF socket.

Replacing the Processor Module

NOTICE: Ensure that the cam lock is in the fully open position before seating the processor module. Seating the processor module properly in the ZIF socket does not require force. A processor module that is not properly seated can result in an intermittent connection or permanent damage to the processor and ZIF socket.

NOTE: The pin-1 corner of the processor module has a triangle that aligns with the triangle on the pin-1 corner of the ZIF socket.

1. Align the pin-1 corner of the processor module with the pin-1 corner of the ZIF socket, and place the processor module on the socket.

   When the processor module is correctly seated, all four corners are aligned at the same height. If one or more corners of the module are higher than the others, the module is not seated correctly.

NOTICE: To avoid damage to the processor, hold the screwdriver so that it is perpendicular to the processor when turning the cam screw.

2. Tighten the ZIF socket by turning the cam screw clockwise to secure the processor module to the system board.

NOTE: When you replace the processor thermal-cooling assembly, be sure to place a new thermal pad on the processor thermal-cooling assembly.

3. Replace the processor thermal-cooling assembly (see Replacing the Processor Thermal-Cooling Assembly).
4. Replace the left hard drive (see Replacing a Hard Drive).
5. Replace the top cover (see Replacing the Top Cover).
6. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

7. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
8. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Processor Thermal-Cooling Assembly

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

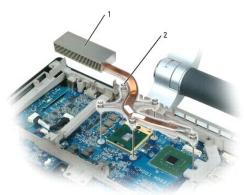
NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Processor Thermal-Cooling Assembly

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Remove the left hard drive (see Removing a Hard Drive).
7. Loosen in consecutive order the five captive screws, labeled "1" through "5", that secure the processor thermal-cooling assembly to the system board.

NOTICE: To ensure maximum cooling for the processor, do not touch the heat transfer areas on the processor thermal-cooling assembly. The oils in your skin reduce the heat transfer capability of the thermal pads.

8. Remove the processor thermal-cooling assembly from the system board.

1	processor thermal-cooling assembly	2	captive screws (5)		

Replacing the Processor Thermal-Cooling Assembly

 NOTE: If you are replacing the thermal-cooling assembly without removing and replacing a new processor, you can place the new thermal pad directly on any existing thermal pad already installed on the thermal-cooling assembly. It is not necessary to remove an existing pad or to clean the surface.

1. Remove the backing from the new thermal pad, taking care not to tear the pad.

2. Place the adhesive-side of the pad on top of the old pad, and press it into place on the thermal-cooling assembly.

3. Place the processor thermal-cooling assembly over the processor.

4. Tighten in consecutive order the five captive screws, labeled "1" through "5", on the processor thermal- cooling assembly.

5. Replace the left hard drive (see Replacing a Hard Drive).

6. Replace the top cover (see Replacing the Top Cover).

7. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

8. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

9. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Removing the Computer Cover

Dell™ XPS™ 700 Service Manual

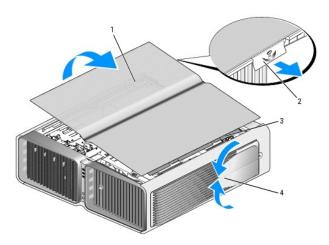
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.

NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

1. Follow the procedures in Before You Begin.

2. Pull back on the cover release latch.

NOTICE: Ensure that sufficient space exists to support the removed cover—at least 30 cm (1 ft) of desk top space.

1	computer cover	2	cover release latch	3	cover hinge tabs
4	stabilizing feet (closed)				

3. With the cover release latch pulled back, grip the sides of the cover, then pivot the top of the cover up and away from the computer.

4. Slide the cover forward and up to remove it from the hinge slots, then set it aside in a secure and protected location.

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Display

Dell™ XPS™ M2010 Service Manual

CAUTION: Before performing the following procedures, follow the safety instructions in your *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

Opening the Display

1. Open the computer by sliding the two display latch releases toward the front of the computer to release the four display latches.

   Two latches hold the display panel to the computer base and two latches hold the display panel to the keyboard.

1	display latch releases (2)	2	display latches (4)		

2. Raise the display panel to open the computer. As you raise the display panel, the four latches will retract into the display panel.

NOTE: If the system battery is drained or removed and there is no power source, the latches will not retract.

Closing the Display

1. Before closing the display panel, ensure that the keyboard is firmly attached to the computer base.

2. Slowly lower the display panel toward the computer base. As you lower the display panel, the four display latches will emerge from the display panel to secure the display to the computer base and keyboard.

NOTE: If the system battery is drained and there is no power source, the latches will not automatically emerge, but you can manually activate them by sliding the display latch release buttons forward.

3. Firmly close the lid so all four latches are engaged.

NOTICE: Ensure that all four latches are engaged securely before picking up the computer to move it or the keyboard could fall and be damaged.

Adjusting the Display Panel

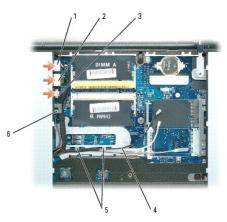
The display on your computer is adjustable. This allows you to find a viewing angle that is comfortable for you.

NOTE: Latches hold the back of the display to the hinge arms. These latches release when the display is opened to a 90 degree angle.

NOTICE: Do not position the display so that it blocks the DVD drive from opening completely.

Removing the LCD Panel

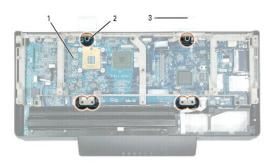
NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. With the computer still turned over, remove the memory module cover (see Removing the Memory Module Cover).
3. Disconnect the cables for the speakers, suspend and solenoid function, and infrared sensor from the system board connectors, and unhook the cables from the routing hook.
4. Disconnect the mini card antenna cables from the mini card, and unhook the cables from the routing hooks.

1	speaker cable	2	infrared sensor cable	3	suspend and solenoid function cable
4	mini card antenna cables	5	routing hooks for the antenna cables	6	routing hook

5. Turn the computer over and open the display (see Opening the Display).
6. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
7. Remove the cosmetic covers (see Removing the Cosmetic Covers).
8. Remove the top cover (see Removing the Top Cover).
9. Remove the right fan (see Removing a System Fan).
10. If your computer has two hard drives, remove the right hard drive (see Removing a Hard Drive).
11. Disconnect the video cable from the video card and remove the video card/thermal-cooling unit (see Removing the Video Card/Thermal-Cooling Assembly).

12. Disconnect the solenoid cable from the solenoid card.

1	system board	2	solenoid cable	3	solenoid card

13. Remove the six M2.5 x 8-mm screws that attach the left and right hinge arms to the computer base.

1	system board	2	M2.5 x 8-mm screws (6)	3	hinge arms

14. Tilt the display forward slightly so the display does not tip over backwards when you remove the computer base.

15. Lift the computer base and carefully thread the solenoid and video cables through the opening in the bottom of the computer base. These cables are attached to the right hinge arm.

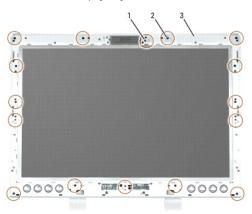
1	video cable	2	solenoid cable	3	opening in computer base

16. Lay the display on its back on a flat clean surface.

NOTICE: When working on the display, be careful not to touch the camera. The glass on the camera is fragile.

17. Starting at the top of the panel, remove the black display bezel from around the LCD panel by carefully prying it loose.

1	black display bezel	2	camera	3	LCD panel

18. On the silver display inlay, remove four M2.5 x 5-mm screws from the holes labeled "A" and twelve M2.5-mm shoulder screws from the remaining holes.

1	M2.5 x 5-mm screws (4)	2	M2.5-mm shoulder screws (12)	3	silver display inlay

19. Starting at the top of the panel, remove the silver inlay from around the LCD panel by carefully prying it loose.

20. On the rails that hold the LCD panel to the display, remove four M2 x 3-mm screws from the left rail, four M2 x 3-mm screws from the right rail, and two M2 x 3-mm screws from the bottom rail.

    NOTE: Do not remove the screws that hold the display latches in place.

1	M2 x 3-mm screws (10)	2	LCD panel	3	rails

21. Carefully raise the LCD panel a few inches, and disconnect the cable underneath the panel by pulling up on the blue pull tab.

1	LCD panel	2	LCD cable	3	pull tab

22. To remove the rails from the LCD panel, remove two M2 x 3-mm screws from the top rail, four M2 x 3- mm screws from the right rail (marked "R"), and four M2 x 3-mm screws from the left rail (marked "L").

    The bottom rail is adhered to the LCD panel. Reserve the other three rails to attach to the new LCD panel.

1	M2 x 3-mm screws (10)	2	left rail	3	LCD panel
4	top rail	5	right rail		

Replacing the LCD Panel

1. Attach the rails from the old LCD panel to the new LCD panel using two M2 x 3-mm screws in the top rail, four M2 x 3-mm screws in the right rail (marked "R"), and four M2 x 3-mm screws in the left rail (marked "L"). Ensure you have "This side up" facing up on all three rails.

   If a bottom rail is not attached to the new LCD panel, adhere a bottom rail to the new panel.

2. Holding the LCD panel over the display, connect the LCD cable to the connector on the display.

3. Lower the LCD panel into place and attach the rails to the display using four M2 x 3-mm screws in the right rail, four M2 x 3-mm screws in the left rail, and two M2 x 3-mm screws in the bottom rail.

4. Snap the silver display inlay back into place around the panel.

5. Attach the silver display inlay to the display using four M2.5 x 5-mm screws in the holes labeled "A" and twelve M2.5-mm shoulder screws in the remaining holes.

NOTE: When replacing the silver display inlay, ensure that the display latches fit through the correct holes.

6. Snap the black display bezel into place.

7. Set the display upright on the hinge arms, leaning the display slightly forward so it does not tip over backwards.

8. Thread the solenoid and video cables through the opening in the computer base next to the right hinge arm.

9. Seat the computer base onto the hinge arms, aligning the screw holes in the computer base with those in the hinge arms.

10. Attach the right and left hinge arms to the base using six M2.5 x 8-mm screws.

11. Connect the solenoid cable to the solenoid card. Thread the cable through the notch and under the frame as shown below.

1	opening on the base	2	solenoid cable	3	solenoid card

12. Replace the video card/thermal-cooling assembly (see Replacing the Video Card/Thermal-Cooling Assembly).

13. Replace the right hard drive (see Replacing a Hard Drive).

14. Replace the right fan (see Replacing a System Fan).

15. Replace the top cover (see Replacing the Top Cover).

16. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: Ensure that you attach the keyboard securely to avoid damage to the keyboard.

17. Firmly reattach the keyboard to the computer and close the display (see Closing the Display).

18. Turn the computer upside down.

19. Connect the antenna cables from the mini card.

20. Connect the speaker cable to the connector on the system board (JSPK).

21. Connect the suspend and solenoid function cable to the connector on the system board (JHING).

22. Connect the infrared sensor cable to the connector on the system board (JCIR).

23. Replace the memory module cover (see Replacing the Memory Module).

24. Replace the system battery (see Replacing the System Battery).

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System Fans

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTE: The left and right system fans are unique. They are not interchangeable.

Removing a System Fan

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Disconnect the fan cable from the system board.

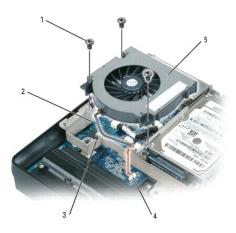
1	left system fan	2	left system fan cable	3	left system board connector (JFAN1)
4	right system board connector (JFAN2)	5	right system fan cable	6	right system fan
7	M2.5 x 5-mm screws (3 per fan)				

7. Remove the fan from the frame by removing the three M2.5 x 5-mm screws.
8. Lift the fan out of the computer.

Replacing a System Fan

NOTE: If the system board was replaced, be sure to reattach the microphone cable under the left fan before replacing the fan.

1	microphone cable	2	microphone cable connector	3	system board connector

1. Attach the left fan to the computer frame using three M2.5 x 5-mm screws.
2. Route the left fan cable under the notch on the frame.
3. Connect the left fan cable to the system board connector (JFAN1).

1	M2.5 x 5-mm screws (3)	2	fan cable	3	notch in frame
4	system board connector (JFAN1)	5	left system fan		

4. Attach the right fan to the computer frame using three M2.5 x 5-mm screws.
5. Route the right fan cable under the notch on the frame.
6. Connect the right fan cable to the system board connector (JFAN2).
7. Replace the top cover (see Replacing the Top Cover).
8. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

9. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
10. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Flashing the BIOS

Dell™ XPS™ M2010 Service Manual

NOTICE: Plug the AC adapter into a known good power source to prevent a loss of power. Failure to do so may cause system damage.

NOTE: The Service Tag is located in the battery compartment.

1. Before flashing the BIOS, follow the instructions in Before Working Inside Your Computer to remove the battery and make a note the Service Tag number.

2. Ensure that the AC adapter is plugged in and that the main battery is installed properly.

NOTE: If you use a BIOS update program CD to flash the BIOS, press <F12> before inserting the CD so that you can set up the computer to boot from a CD this one time only. Otherwise, you must enter the system setup program to change the default boot order.

3. Insert the BIOS update program CD, and turn on the computer.

NOTICE: Do not interrupt this process once it begins. Doing so may cause system damage.

Follow the instructions that appear on the screen. The computer continues to boot and updates the new BIOS. When the flash update is complete, the computer will automatically reboot.

4. Press <F2> during POST to enter the system setup program to update the BIOS on the new system board with the computer Service Tag.

5. Press <Alt> and <f> to reset the computer defaults.

6. Press <Esc>, select **Save changes and reboot**, and press <Enter> to save configuration changes.

7. Remove the flash BIOS update program CD from the drive and restart the computer.

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Frame

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Frame

NOTICE: To help prevent damage to the system board, you must remove the main battery before you begin working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Remove the hard drive(s) (see Removing a Hard Drive).
7. Remove the system fans (see Removing a System Fan).
8. Remove the video card/thermal-cooling assembly (see Removing the Video Card/Thermal-Cooling Assembly).
9. Remove the processor thermal-cooling assembly (see Removing the Processor Thermal-Cooling Assembly).
10. Remove the frame by removing the fourteen M2.5 x 8-mm screws that attach the frame to the computer base.

1	frame	2	M2.5 x 8-mm screws (14)		

Replacing the Frame

1. Attach the frame to the computer base with fourteen M2.5 x 8-mm screws.
2. Replace the processor thermal-cooling assembly (see Replacing the Processor Thermal-Cooling Assembly).
3. Replace the video card/thermal-cooling assembly (see Replacing the Video Card/Thermal-Cooling Assembly).
4. Replace the system fans (see Replacing a System Fan).

5. Replace the hard drive(s) (see Replacing a Hard Drive).

6. Replace the top cover (see Replacing the Top Cover).

7. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

8. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

9. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Hard Drive(s)

Dell™ XPS™ M2010 Service Manual

CAUTION: If you remove the hard drive from the computer when the drive is hot, *do not touch* the metal housing of the hard drive.

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTICE: To prevent data loss, turn off your computer before removing the hard drive. Do not remove the hard drive while the computer is on, in standby mode, or in hibernate mode.

NOTICE: Hard drives are extremely fragile; even a slight bump can damage the drive.

NOTE: Dell does not guarantee compatibility or provide support for hard drives from sources other than Dell.

Your computer may contain two hard drives — a primary hard drive and a secondary hard drive. The left hard drive is the primary hard drive (HDD1), and the right hard drive is the secondary hard drive (HDD2). If you remove a hard drive, you must replace it in the same drive location.

If your computer has two hard drives configured for RAID, and you replace one or both, the new hard drive(s) must be configured for RAID. See "About Your RAID Configuration" in your *Owner's Manual*.

1	primary hard drive (HDD1)	2	secondary hard drive (HDD2)		

Removing a Hard Drive

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Loosen the four captive screws on each corner of the hard drive bracket.
7. Lift the hard drive only a few inches, and disconnect the data cable from the system board by pulling up on the black tab.

1	primary hard drive (HDD1)	2	hard drive bracket	3	captive screws (4)
4	pull tab				

NOTICE: When the hard drive is not in the computer, store it in protective antistatic packaging. See "Protecting Against Electrostatic Discharge" in your *Product Information Guide*.

8. Remove the four M3 x 3-mm screws that attach the hard drive to the hard drive bracket.

9. Pull the strap on the hard drive cable to remove the data cable from the hard drive. Reserve this cable for use with the new hard drive.

1	hard drive	2	M3 x 3-mm screws (4)	3	hard drive brackets (2)
4	hard drive cable connector				

Replacing a Hard Drive

1. Attach the new hard drive to the brackets using four M3 x 3-mm screws.

2. Connect the data cable to the new hard drive.

3. Connect the hard drive cable to the appropriate connector on the system board (JHDD1 for primary; JHDD2 for secondary).

4. Align the captive screws in each corner of the hard drive with the holes in the frame and tighten the screws.

5. Replace the top cover (see Replacing the Top Cover).

6. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

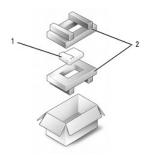
7. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

8. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

If you have installed a replacement hard drive:

9. Turn the computer over and open the display (see Opening the Display).
10. Press the power button to turn the computer on.
11. Reinstall the Microsoft® Windows® operating system. For instructions, see "Restoring Your Operating System" in the *Owner's Manual*.
12. Reinstall drivers on the new hard drive. For instructions, see "Reinstalling Drivers and Utilities" in the *Owner's Manual*.
13. If the original hard drive had RAID configured, configure RAID on the new hard drive. See "About Your RAID Configuration" in your *Owner's Manual.*

Returning a Hard Drive to Dell

Return your old hard drive to Dell in its original or comparable foam packaging. Otherwise, the hard drive may be damaged in transit.

1	hard drive	2	foam packaging		

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Keyboard

Dell™ XPS™ M2010 Service Manual

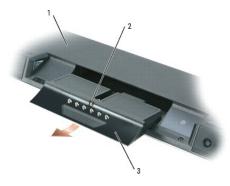
 CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTICE: Do not attempt to move the computer with the keyboard attached and the display open or the keyboard will fall away from the computer base and the keyboard may be damaged.

To detach the keyboard from the computer, grasp the sides of the keyboard and pull it straight out from the computer base. For most service procedures, you will detach the keyboard and set it aside.

Removing the Keyboard Battery

1. Open the display (see Opening the Display).
2. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base.
3. Turn the keyboard over.
4. Loosen the captive screw on the keyboard battery.
5. Slide the battery out of the keyboard battery compartment.

1	keyboard	2	captive screw	3	keyboard battery

Replacing the Keyboard Battery

1. Insert the new keyboard battery into the battery compartment and snap it into place.

2. Tighten the captive screw.

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Replacing the Computer Cover

Dell™ XPS™ 700 Service Manual

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: Your computer is heavy and can be difficult to maneuver. Seek assistance before attempting to lift, move, or tilt the computer and always lift correctly to avoid injury; avoid bending over while lifting.

CAUTION: The computer stand should be installed at all times to ensure maximum system stability. Failure to install the stand could result in the computer tipping over, potentially resulting in bodily injury or damage to the computer.

NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

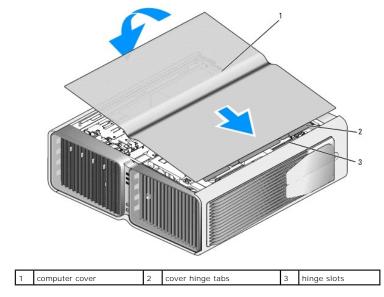
1. Ensure that all cables are connected, and fold cables out of the way.

2. Ensure that no tools or extra parts are left inside the computer.

3. Pivot the cover down and into position.

4. Press down on the cover until it clicks into place.

NOTE: The computer cover should easily snap into place; however, if necessary, pull back on the cover release latch until the cover is completely closed, then slide the release latch forward to secure the cover.

1	computer cover	2	cover hinge tabs	3	hinge slots

5. With the help of an assistant, carefully set the computer upright.

6. Carefully, lift the rear of the computer and rotate the stabilizing feet outward into the open position.

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

7. Connect your computer and devices to electrical outlets, and turn them on.

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Memory Module

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

NOTE: Memory modules purchased from Dell are covered under your computer warranty.

NOTE: To get maximum performance/dual-channel memory bandwidth capability, both memory module connectors must contain memory modules and the modules must be of the same size and configuration.

The computer has two memory slots, DIMM A and DIMM B, located under the memory module cover. If you replace or upgrade the memory in your computer, both memory modules must be the same size.

Removing the Memory Module Cover

NOTICE: To help prevent damage to the system board, you must remove the main battery before you begin working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.

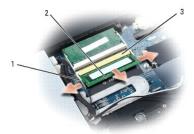
2. With the computer still turned over, loosen the captive screw on the memory module cover and slide the cover toward the back of the computer to remove it.

1	memory module cover	2	captive screw		

Removing the Memory Module

NOTICE: To prevent damage to the memory module connector, do not use tools to spread the memory-module securing clips.

1. Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the module pops up.

2. Remove the module from the connector on the system board.

1	securing clips (2 per connector)	2	memory modules (2)	3	system board connectors (2)

Replacing the Memory Module

NOTICE: Insert memory modules at a 45-degree angle to avoid damaging the connector.

NOTE: If the memory module is not installed properly, the computer may not boot properly. No error message indicates this failure.

NOTE: To get maximum performance/dual-channel memory bandwidth capability, both memory module connectors must contain memory modules and the modules must be of the same size and configuration.

1. Align the notch on the edge of the memory module connector with the tab in the connector on the system board, and slide the module firmly into the connector at a 45-degree angle.

2. Rotate the module down until it clicks into place. If you do not feel the click, remove the module and reinstall it.

3. Replace the memory cover. Align the notches in the cover with the tabs on the base, slide the cover toward the front of the computer, and tighten the captive screw.

NOTICE: If the cover is difficult to close, remove the module and reinstall it. Forcing the cover to close may damage your computer.

4. Replace the system battery (see Replacing the System Battery).

5. Turn the computer over and open the display (see Opening the Display).

6. Press the power button to turn the computer on.

As the computer boots, it detects the additional memory and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer, click the **Start** button, click **Help and Support**, and then click **Computer Information**.

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Modem

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Modem

NOTICE: To help prevent damage to the system board, you must remove the main battery before you begin working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Remove the hard drive(s) (see Removing a Hard Drive).
7. Remove the system fans (see Removing a System Fan).
8. Remove the video card/thermal-cooling assembly (see Removing the Video Card/Thermal-Cooling Assembly).
9. Remove the processor thermal-cooling assembly (see Removing the Processor Thermal-Cooling Assembly).
10. Remove the frame (see Removing the Frame).
11. Remove the two M2 x 3-mm screws that attach the modem to the system board.
12. Pull up on the pull-tab to disconnect the modem from the connector on the system board.

NOTICE: Do not disconnect the modem cable from the system board.

13. Disconnect the modem cable from the modem.

1	system board connector	2	M2 x 3-mm screws (2)	3	pull-tab
4	modem	5	modem cable		

Replacing the Modem

1. Connect the modem cable to the modem.

NOTICE: Ensure that the modem cable is routed correctly when you replace the modem.

2. Align the connector on the bottom of the modem with the modem connector on the system board, and press down on the "PRESS HERE" label on the modem to connect it to the system board.
3. Attach the modem to the system board with two M2 x 3-mm screws.
4. Replace the frame (see Replacing the Frame).
5. Replace the processor thermal-cooling assembly (see Replacing the Processor Thermal-Cooling Assembly).
6. Replace the video card/thermal-cooling assembly (see Replacing the Video Card/Thermal-Cooling Assembly).
7. Replace the system fans (see Replacing a System Fan).
8. Replace the hard drive(s) (see Replacing a Hard Drive).
9. Replace the top cover (see Replacing the Top Cover).
10. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

11. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
12. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Optical Drive

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

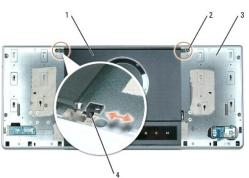
NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

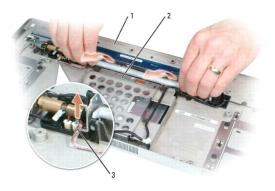
NOTICE: To help prevent damage to drives, store them in a safe, dry place when they are not installed in the computer. Avoid pressing down on them or placing heavy objects on top of them.

Your computer ships with a fixed optical drive installed.

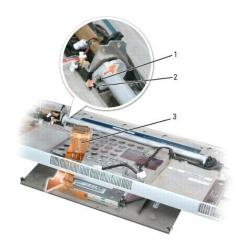
Removing the Optical Drive Assembly

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Remove the optical drive assembly from the top cover by removing the two M2.5 x 5-mm screws and the end caps.

1	optical drive assembly	2	M2.5 x 5-mm screws (2)	3	top cover
4	end caps				

7. While holding the optical drive assembly and the top cover together, turn the top cover over.
8. Disconnect and untape the disk sensor cable from the top cover.
9. Rotate the swing arm on the top cover toward the optical drive assembly to put the optical drive in the "Open" position.

1	top cover (underside)	2	optical drive assembly	3	disk sensor cable

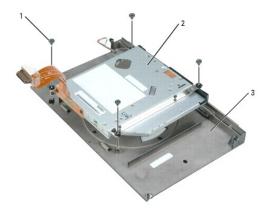
10. Lower the back of the assembly slightly and slide it away from the top cover, disconnecting the black round tabs on the assembly from the notches in the swing arm.

11. Carefully guide the optical drive cable and disk sensor cable through their respective openings in the top cover.

1	notch in swing arm (2)	2	tab on optical drive assembly (2)	3	optical drive cable

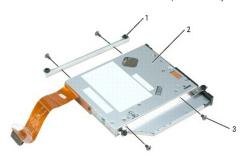
Removing Media from the Optical Drive

If media becomes stuck in the optical drive, you can retrieve the media by opening the drive.

1. Remove the optical drive assembly (see Removing the Optical Drive Assembly.)

2. Remove the optical drive from the optical drive assembly by removing the four M2.0-mm shoulder screws that hold the optical drive to the assembly.

1	M2.0-mm shoulder screws (4)	2	optical drive	3	optical drive assembly

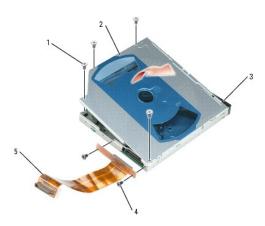
3. Lift the optical drive out of the assembly.

4. Remove the two drive rails from the optical drive by removing the two M2 x 3-mm screws in each drive rail.

1	optical drive rails (2)	2	optical drive	3	M2 x 3-mm screws on rails (4)

5. Remove the optical drive cable from the optical drive by removing the two M2 x 3-mm screws.

6. Remove the four M2.0-mm shoulder screws on the optical drive cover.

7. Slide the top cover away from the front bezel to disengage the tabs, and lift the drive cover off the drive.

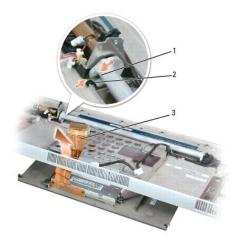
8. Remove the media from the drive.

1	M2.0-mm shoulder screws (4)	2	optical drive	3	front bezel

4	M2 x 3-mm screws (2)	5	optical drive cable		

To reassemble the optical drive:

1. Slide the drive cover onto the drive and engage the tabs on the cover to the front bezel.
2. Replace the four M2.0-mm shoulder screws in the optical drive cover.
3. Connect the optical drive cable to the drive with two M2 x 3-mm screws.
4. Attach the two rails to the drive with two M2 x 3-mm screws in each drive rail.
5. Attach the optical drive to the optical drive assembly with four M2.0-mm shoulder screws.

Replacing the Optical Drive Assembly

1. Carefully thread the optical drive cable and disk sensor cable back through the top cover.
2. While holding the top cover level in one hand, tilt the optical drive assembly slightly at an angle and fit the lip of the assembly into the slot on the top cover.
3. Fit the black round tabs on the assembly into the notches in the swing arm.

1	notch in swing arm (2)	2	tab on optical drive assembly (2)	3	optical drive cable

4. Rotate the swing arm away from the optical assembly to bring the optical drive to the "Closed" position.
5. Attach the disk sensor cable and tape it to the underside of the top cover.
6. Holding the optical drive assembly in place, turn the top cover over.
7. Attach the optical drive assembly to the top cover with two M2.5 x 5-mm screws and end caps.
8. Replace the top cover (see Replacing the Top Cover).
9. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

10. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
11. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

Removing and Installing Parts

Dell™ XPS™ 700 Service Manual

Memory

You can increase your computer memory by installing memory modules on the system board.

Your computer supports DDR2 memory. For additional information on the type of memory supported by your computer, see Memory.

DDR2 Memory Overview

- DDR2 memory modules should be installed in *pairs of matched memory size and speed*. If the DDR2 memory modules are not installed in matched pairs, the computer will continue to operate, but with a slight reduction in performance. See the label on the upper-right or upper-left corner of the module to determine the module's capacity.

NOTE: Always install DDR2 memory modules in the order indicated on the system board.

The recommended memory configurations are:

- A pair of matched memory modules installed in DIMM connectors 1 and 2

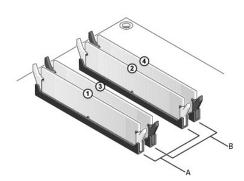
or

- A pair of matched memory modules installed in DIMM connectors 1 and 2 and another matched pair installed in DIMM connectors 3 and 4

NOTICE: Do not install ECC memory modules.

- If you install mixed pairs of PC2-4300 (DDR2 533-MHz) and PC2-5300 (DDR2 667-MHz) memory, the modules function at the speed of the slowest module installed.
- Be sure to install a single memory module in DIMM connector 1, the connector closest to the processor, before you install modules in any other connector.

.

A	matched pair of modules in DIMM connectors 1 and 2 (white securing clips)	B	matched pair of memory modules in DIMM connectors 3 and 4 (black securing clips)

 NOTICE: If you remove your original memory modules from the computer during a memory upgrade, keep them separate from any new modules that you may have, even if you purchased the new modules from Dell. If possible, do not pair an original memory module with a new memory module. Otherwise, your computer may not start properly. You should install your original memory modules in pairs either in DIMM connectors 1 and 2 or DIMM connectors 3 and 4.

 NOTE: Memory purchased from Dell is covered under your computer warranty.

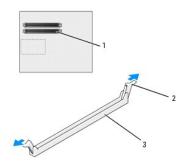
Addressing Memory Configurations

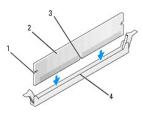
If you are using a 32-bit operating system such as Microsoft® Windows® XP, your computer will support a maximum of 4 GB of memory. If you are using a 64-bit operating system, your computer will support a maximum of 8 GB (2-GB DIMMs in each of the four slots) of memory.

Installing Memory

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

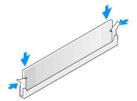
NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Press out the securing clip at each end of the memory module connector.

1	memory connector closest to processor	2	securing clips (2)	3	memory connector

4. Align the notch on the bottom of the module with the crossbar in the connector.

1	cutouts (2)	2	memory module	3	notch
4	crossbar				

NOTICE: To avoid damage to the memory module, press the module straight down into the connector while you apply equal force to each end of the module.

5. Insert the module into the connector until the module snaps into position.

   If you insert the module correctly, the securing clips snap into the cutouts at each end of the module.

6. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

7. Connect your computer and devices to electrical outlets, and then turn them on.

8. When the message appears stating that memory size has changed, press <F1> to continue.

9. Log on to your computer.

10. Right-click the **My Computer** icon on your Windows desktop and click **Properties**.

11. Click the **General** tab.

12. To verify that the memory is installed correctly, check the amount of memory (RAM) listed.

Removing Memory

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

1. Follow the procedures in Before You Begin.

2. Press out the securing clip at each end of the memory module connector.

3. Grasp the module and pull up.

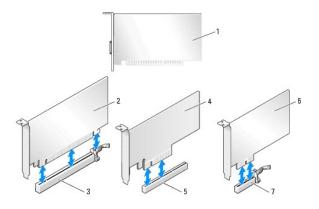
   If the module is difficult to remove, gently ease the module back and forth to remove it from the connector.

Cards

 CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Your Dell™ computer provides the following slots for PCI and PCI Express cards:

- Three PCI card slots
- Two PCI Express x16 card slots (can be used in a dual-graphics configuration)
- One PCI Express x8 card slot
- One PCI Express x1 card slot

NOTE: If a graphics card is installed in each of the PCI Express x16 card slots in the dual-graphics configuration, the PCI Express x1 and one PCI card slot are not accessible for use.

1	PCI card	2	PCI Express x16 card	3	PCI Express x16 card slot
4	PCI Express x8 card	5	PCI Express x8 card slot	6	PCI Express x1 card
7	PCI Express x1 card slot				

Removing PCI and PCI Express Cards

NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

NOTICE: If you did not order a graphics card with your computer, Dell has provided a PCI graphics card for troubleshooting purposes. Removal of the card is not necessary when installing additional graphics cards; however, if you remove the card, store it in a safe and secure location for future use.

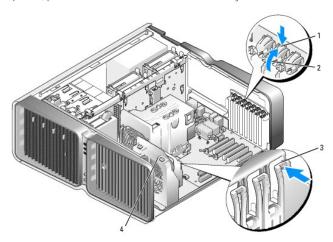
NOTICE: If you have the optional dual graphics card configuration, see Removing a PCI Express Graphics Card from a Dual Configuration to remove or replace a graphics card.

1. Follow the procedures in Before You Begin.

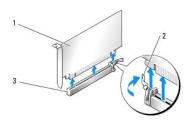
2. Remove the computer cover (see Removing the Computer Cover).

3. Disconnect any cables connected to the card.

4. Press down the tab on the top of the card retainer at the appropriate card slot and pivot the card retainer back through the chassis wall.

5. If present, press the tab on the card retention device that lays over the installed cards and lift it to gain full access to the card.

1	release tab	2	card retainer	3	alignment guide
4	fan bracket				

6. Press the release tab (if present) on the system board connector as you grasp the card by its top corners, and then ease the card out of the connector.

NOTE: If the card is full-length, press the release tab on the end of the alignment guides on the fan bracket.

1	PCI Express x16 card	2	securing tab	3	PCI Express x16 card slot

7. Install a filler bracket in the empty card-slot opening. If you are replacing the card, see Installing PCI and PCI Express Cards.

NOTE: Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

NOTICE: Before rotating the card retainer back into place, ensure that the tops of all cards and filler brackets are flush with the alignment bar and the notch in the top of each card or filler bracket fits around the alignment guide.

NOTICE: Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

8. Rotate the card retainer back into its original position; push its tip so that its tab clicks into place.

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug the cable into the computer.

9. If present, lower the card-retention device that lays over the installed cards and snap it into place.
10. Replace the computer cover (see Replacing the Computer Cover).
11. Connect you computer and devices to electrical outlets, and then turn them on.
12. Uninstall the driver for the card that you removed.

NOTE: If you removed a sound card or a network adapter, see Network Adapter and Sound Card Settings.

Installing PCI and PCI Express Cards

NOTICE: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis.

NOTICE: If you did not order a graphics card with your computer, Dell has provided a PCI graphics card for troubleshooting purposes. Removal of the card is not necessary when installing additional graphics cards; however, if you remove the card, store it in a safe and secure location for future use.

NOTICE: If you have or are upgrading to the optional dual-graphics configuration, see Installing a PCI Express Graphics Card in a Dual Configuration to install a graphics card.

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Replacing the Computer Cover).
3. If present, press the tab on the card retention device that lays over the installed cards and rotate it upwards to gain full access to the card.
4. Press down the tab on the top of the card retainer at the appropriate card slot and pivot the card retainer back through the chassis wall.

1	release tab	2	card retainer	3	alignment guide
4	fan bracket				

5. Remove the filler bracket or existing card (see Removing PCI and PCI Express Cards) to create a card- slot opening.

6. Prepare the card for installation.

   See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

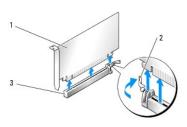
7. Position the card so that it is aligned with the slot and the securing tab (if present) is aligned with the securing slot.

NOTE: If the card is full-length, insert the card guide into the alignment slot on the fan bracket.

1	PCI Express x16 card	2	securing tab	3	PCI Express x16 card slot

NOTICE: Ensure that you release the securing tab to seat the card. If the card is not installed correctly, you may damage the system board.

8. Gently pull the securing tab (if present) and place the card in the connector. Press down firmly and ensure that the card is fully seated in the slot.

1	card connector (seated)	2	card connector (not	3	bracket properly aligned

			seated)		within slot
4	bracket improperly aligned outside of slot	5	alignment bar	6	alignment guide

NOTICE: Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

NOTICE: An incorrectly attached graphics power cable may result in degraded graphics performance.

9. Connect any cables that should be attached to the card.

   See the documentation for the card for information about the card's cable connections.

NOTICE: Before rotating the card retainer back into place, ensure that the tops of all cards and filler brackets are flush with the alignment bar and the notch in the top of each card or filler bracket fits around the alignment guide.

10. Rotate the card retainer back into its original position; push its tip so that its tab clicks into place.

11. If present, lower the card-retention device that lays over the installed cards and snap it into place.

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug the cable into the computer.

12. Replace the computer cover (see Replacing the Computer Cover).

13. Connect your computer and devices to electrical outlets, and then turn them on.

14. Install any drivers required for the card as described in the card documentation.

    NOTE: If you installed a sound card or a network adapter, see Network Adapter and Sound Card Settings.

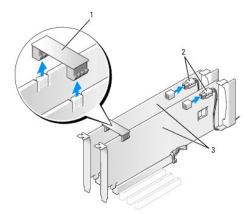
Removing a PCI Express Graphics Card from a Dual Configuration

NOTE: This section regards dual configurations of PCI Express x16 graphics cards only. For removal of any other type of PCI or PCI Express cards, see Removing PCI and PCI Express Cards.

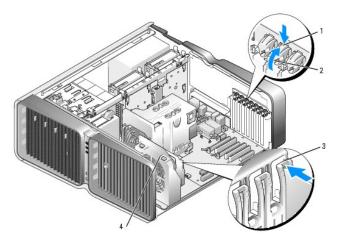
1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

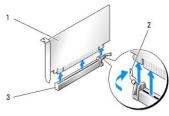
3. If present, press the tab on the card retention device that lays over the installed cards and rotate it upwards to gain full access to the card.

4. Gently securing both graphics cards with one hand, remove the graphics card bridge (if present) with your other hand by pulling it up and away from the computer. Set it aside.

1	graphics card bridge	2	power connectors (2)	3	dual-PCI Express graphics cards

5. Disconnect any cables connected to the card.

6. Press down the tab on the top of the card retainer at the appropriate card slot and pivot the card retainer back through the chassis wall.

1	release tab	2	card retainer	3	alignment guide
4	fan bracket				

7. Press the release tab (if present) on the system board connector as you grasp the card by its top corners, and then ease the card out of the connector.

   NOTE: If the card is full-length, press the release tab on the end of the alignment guides on the fan bracket.

1	PCI Express x16 card	2	securing tab	3	PCI Express x16 card slot

8. Install a filler bracket in the empty card-slot opening. If you are replacing the card, see Installing a PCI Express Graphics Card in a Dual Configuration.

   NOTE: Installing filler brackets over empty card-slot openings is necessary to maintain FCC certification of the computer. The brackets also keep dust and dirt out of your computer.

   NOTE: The graphics card bridge (not present in all dual-graphics configurations) is not necessary in a single graphics card configuration.

NOTICE: Before rotating the card retainer back into place, ensure that the tops of all cards and filler brackets are flush with the alignment bar and the notch in the top of each card or filler bracket fits around the alignment guide.

NOTICE: Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

9. Rotate the card retainer back into its original position; push its tip so that its tab clicks into place.

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug the cable into the computer.

10. If present, lower the card-retention device that lays over the installed cards and snap it into place.

11. Replace the computer cover (see Replacing the Computer Cover)

12. Connect your computer and devices to electrical outlets, and then turn them on.

Installing a PCI Express Graphics Card in a Dual Configuration

NOTE: To upgrade to or downgrade from a dual-graphics configuration, you will need additional parts that can be ordered from Dell (see "Contacting Dell" in your *Owner's Manual*).

This section pertains to dual PCI Express graphics card configurations only. For installation of other types of PCI or PCI Express cards, see Installing PCI and

PCI Express Cards.

The PCI Express x1 card slot is not available for use if a graphics card is installed in each of the PCI Express x16 card slots in a dual-graphics card configuration. If you are upgrading from a single graphics card to a dual-graphics card configuration, you will need to remove any card installed in the PCI Express x1 card slot (see System Board Components to locate the PCI Express x1 card slot). To remove a PCI Express card, see Removing PCI and PCI Express Cards.

NOTICE: For information about upgrading your system to use NVIDIA SLI (Scalable Link Interface) dual-graphics technology, see the Dell website at **support.dell.com**.

To learn more about dual-graphics technology, see "Understanding Dual Graphics Technology" in your *Owner's Manual*.

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. If present, press the tab on the card-retention device that lays over the installed cards and rotate it upwards to gain full access to the card.

4. Press down the tab on the top of the card retainer at the appropriate card slot and pivot the card retainer back through the chassis wall.

1	release tab	2	card retainer	3	alignment guide
4	fan bracket				

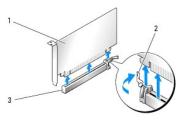
5. Remove the filler bracket or existing graphics card (see Removing a PCI Express Graphics Card from a Dual Configuration) to create a card-slot opening.

 NOTE: If you are upgrading to a dual-graphics card configuration and have a card installed in the PCI Express x1 card slot, remove the card (see Removing PCI and PCI Express Cards).

6. Prepare the card for installation.

   See the documentation that came with the card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

7. Position the card so that it is aligned with the slot and the securing tab (if present) is aligned with the securing slot.

 NOTE: If the card is full-length, insert the card guide into the alignment slot on the fan bracket.

1	PCI Express x16 card	2	securing tab	3	PCI Express x16 card slot

NOTICE: Ensure that you release the securing tab to seat the card. If the card is not installed correctly, you may damage the system board.

8. Gently pull the securing tab (if present) and place the card in the connector. Press down firmly and ensure that the card is fully seated in the slot.

NOTICE: Do not route card cables over or behind the cards. Cables routed over the cards can prevent the computer cover from closing properly or cause damage to the equipment.

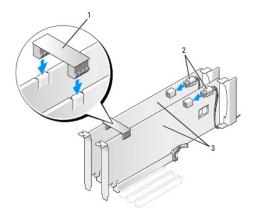
NOTICE: An incorrectly attached graphics power cable may result in degraded graphics performance.

9. Connect any cables that should be attached to the card.

   See the documentation for the card for information about the card's cable connections.

NOTICE: Before rotating the card retainer back into place, ensure that the tops of all cards and filler brackets are flush with the alignment bar and the notch in the top of each card or filler bracket fits around the alignment guide.

10. Rotate the card retainer back into its original position; push its tip so that its tab clicks into place.

11. Attach the graphics card bridge (if required for your dual-graphics configuration), pressing firmly so that it completely covers the connector tabs.

1	graphics card bridge (not present on some dual-graphics card configurations)	2	power connectors (2)	3	dual-PCI Express graphics cards

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug the cable into the computer.

12. If present, lower the card-retention device that lays over the installed cards and snap it into place.

13. Replace the computer cover (see Replacing the Computer Cover).

14. Connect your computer and devices to electrical outlets, and then turn them on.

Network Adapter and Sound Card Settings

If you installed a sound card:

1. Enter system setup (see Entering System Setup), select **Integrated Audio Controller**, and then change the setting to **Off**.

2. Connect external audio devices to the sound card connectors. Do not connect external audio devices to the microphone, speaker/headphone, or line-in connectors on the back panel.

If you removed a sound card:

1. Enter system setup (see Entering System Setup), select **Integrated Audio Controller**, and then change the setting to **On**.

2. Connect external audio devices to the audio connectors on the back panel of the computer.

If you installed an add-in network adapter and want to disable the integrated network adapter:

1. Enter system setup (see Entering System Setup), select **Integrated NIC Controller,** and then change the setting to **Off**.
2. Connect the network cable to the add-in network adapter connectors. Do not connect the network cable to the integrated connector on the back panel.

If you removed an add-in network connector:

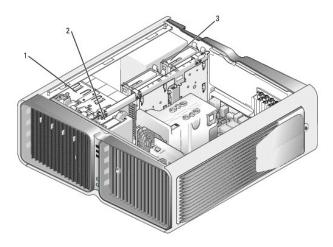
1. Enter system setup (see Entering System Setup), select **Integrated NIC Controller**, and then change the setting to **On**.
2. Connect the network cable to the integrated connector on the back panel of the computer.

Drives

Your computer supports:

- Six SATA devices (hard drives or optical drives)
- Two IDE devices (two hard drives or two optical drives)
- One floppy drive
- One Media Card Reader

NOTICE: When removing and replacing drives, be sure to leave the drive data and power cables connected to the system board.

NOTE: The 5.25-inch Media Card Reader/floppy drive carrier is not interchangeable with the hard drive carrier.

1	CD/DVD drive bays (4)	2	floppy drive/media card reader	3	hard-drive bays (4)

About Serial ATA (SATA) Drives

Your computer supports up to four serial ATA hard drives and two serial ATA optical drives. SATA drives provide the following benefits by transferring data using serial technology and flexible cables that are thinner and longer than IDE cables:

- Improved cable routing facilitates more efficient airflow inside the chassis.
- Compact cable connectors save space on the system board and on the hard drive, allowing for more efficient utilization of space inside the chassis.

General Drive Installation Guidelines

SATA drives should be connected to connectors labeled "SATA" on the system board. IDE drives should be connected to the connectors labeled "IDE."

When connecting a SATA cable, hold the cable by the connector at each end and press firmly into the connector. When disconnecting a SATA cable, hold the cable by the connector at each end and pull until the connector detaches.

1	SATA data cable	2	SATA data connector (on the system board)	3	SATA drive

When you connect two IDE devices to a single IDE data cable and configure the devices for the cable select setting, the device attached to the last connector on the data cable is primary or the boot device, and the device attached to the middle connector on the data cable is the secondary device. See the drive documentation in your upgrade kit for information on configuring devices for the cable select setting.

To connect an IDE data cable, align the tab on one connector with the notch on the other. When disconnecting an IDE data cable, grasp the colored pull-tab and pull until the connector detaches.

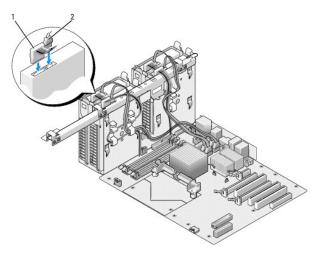
Hard Drive

Removing a Hard Drive

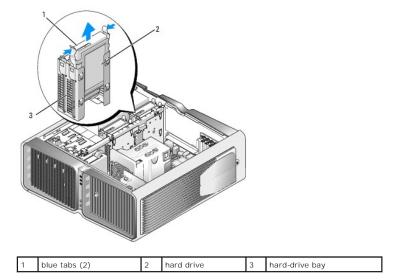
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.

NOTICE: If you are replacing a hard drive that contains data that you want to keep, back up your files before you begin this procedure.

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Disconnect the power cable and the data cable from the hard drive.

1	power cable	2	data cable

4. Press the blue tabs on each side of the hard-drive bracket toward each other and slide the drive up and out of the hard-drive bay.

1	blue tabs (2)	2	hard drive	3	hard-drive bay

5. Ensure that all connectors are properly cabled and firmly seated.

6. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

7. Connect your computer and devices to electrical outlets, and then turn them on.

Installing a Hard Drive

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

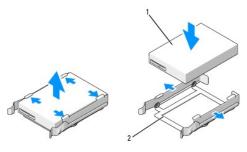
1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

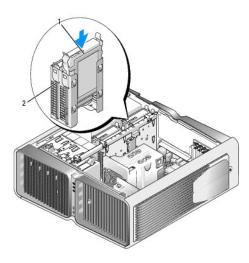
3. Remove the existing hard drive, if applicable (see Removing a Hard Drive).

   NOTE: If a hard-drive bracket is installed inside of the hard-drive bay, remove the bracket before you install the new hard drive.

4. Prepare the new hard drive for installation and check the documentation for the hard drive to verify that the drive is configured for your computer.

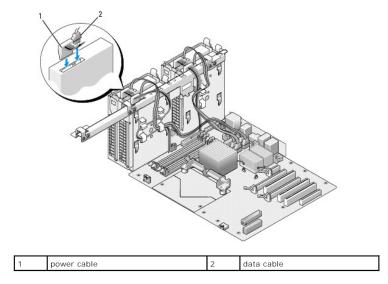
   NOTE: If hard drive you are installing does not have the hard drive bracket attached, use your original hard drive bracket; snap the bracket onto the new drive.

1	hard drive	2	hard-drive bracket

5. Verify that the hard-drive bay is empty and unobstructed.

6. Slide the hard drive into the hard-drive bay until it clicks securely into place.

1	hard drive	2	hard-drive bay

NOTICE: Ensure that all connectors are properly cabled and firmly seated.

7. Connect the power cable to the hard drive.

8. Connect the hard-drive data cable to the hard drive.

1	power cable	2	data cable

9. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

10. Connect your computer and devices to electrical outlets, and then turn them on.

    See the documentation that came with the drive for instructions on installing any software required for drive operation.

Drive Panel

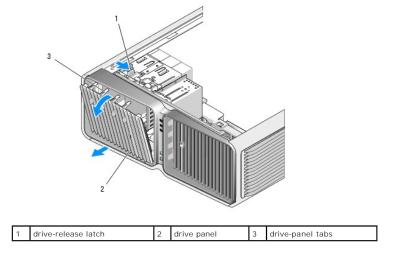
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Removing the Drive Panel

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Grasp the drive-release latch and slide it towards the base of the computer until the drive panel snaps open.

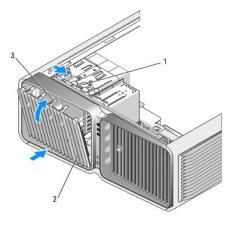
1	drive-release latch	2	drive panel	3	drive-panel tabs

4. Pivot the drive panel outward and lift it from its side hinges.

5. Set the drive panel aside in a secure location.

Installing the Drive Panel

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Align the drive panel tabs with the side-door hinges.

1	drive-release latch	2	drive panel	3	drive-panel tabs

4. Rotate the drive panel toward the computer until it snaps into place on the drive panel.

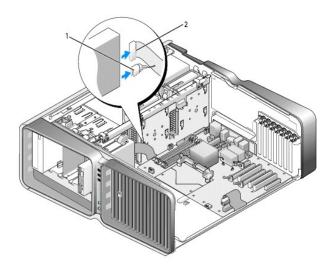
5. Replace the computer cover (see Replacing the Computer Cover).

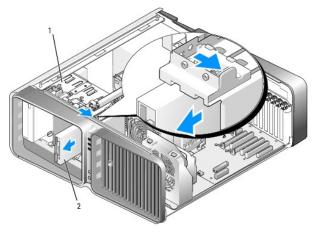
See the documentation that came with the drive for instructions on installing any software required for drive operation.

Floppy Drive

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.**

Removing a Floppy Drive

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Remove the drive panel (see Removing the Drive Panel).
4. Disconnect the power and data cables from the back of the floppy drive.

1	power cable	2	floppy drive data cable

5. Slide the drive-release latch towards the base of the computer to release the shoulder screw, and then slide the drive out of the drive bay.

1	drive-release latch	2	floppy drive

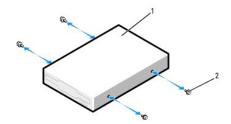
6. Replace the drive panel (see Installing the Drive Panel).

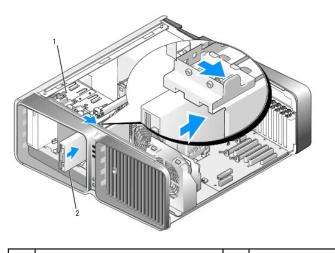
7. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

8. Connect your computer and devices to electrical outlets, and then turn them on.

Installing a Floppy Drive

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Remove the drive panel (see Removing the Drive Panel).
4. Remove the existing floppy drive, if applicable (see Removing a Floppy Drive).
5. If no screws are attached to the new floppy drive, check the inside of the drive panel for shoulder screws. If screws are present, attach the screws to the new drive.

1	floppy drive	2	shoulder screws (4)

Slide the floppy drive into the drive bay until it clicks into place.

1	drive release latch	2	floppy drive

6. Connect the power and data cables to the back of the floppy drive.
7. Check all cable connections and fold cables out of the way to avoid blocking airflow between the fan and cooling vents.
8. Replace the drive panel (see Installing the Drive Panel).
9. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it in to the computer.

10. Connect your computer and devices to electrical outlets, and then turn them on.

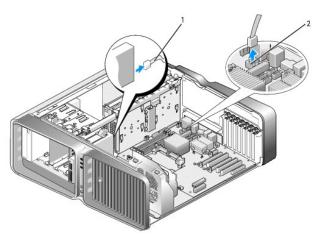
    See the documentation that came with the drive for instructions on installing any software required for drive operation.

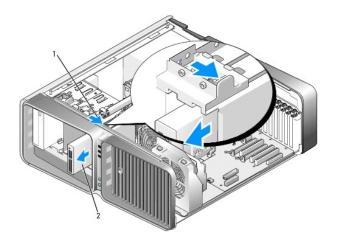
11. Enter system setup (see Entering System Setup), and select the appropriate **Diskette Drive** option.

Media Card Reader

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Removing a Media Card Reader

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Remove the drive panel (see Removing the Drive Panel).
4. Disconnect the power and data cables from the back of the Media Card Reader.

1	media card reader power cable	2	system board connector

5. Slide the drive-release latch towards the base of the computer to release the shoulder screw, and then slide the media card reader out of the drive bay.

1	drive-release latch	2	media card reader

6. Replace the drive panel (see Installing the Drive Panel).

7. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

8. Connect your computer and devices to electrical outlets, and then turn them on.

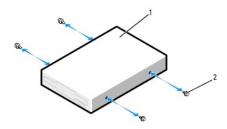
Installing a Media Card Reader

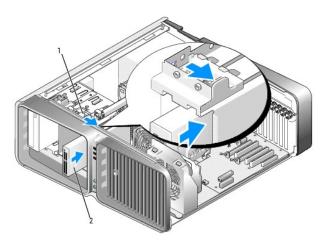
1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Remove the drive panel (see Removing the Drive Panel).

4. Remove the existing media card reader, if applicable (see Removing a Media Card Reader).

5. If no screws are attached to the Media Card Reader, check the inside of the drive panel for shoulder screws. If screws are present, attach the screws to the new card reader.

1	media card reader	2	shoulder screws (4)

6. Slide the Media Card Reader into the drive bay until it clicks into place.

1	drive-release latch	2	media card reader

7. Attach the power and data cables to the back of the Media Card Reader.

8. Check all cable connections and fold cables out of the way to avoid blocking airflow between the fan and cooling vents.

9. Replace the drive panel (see Installing the Drive Panel).

10. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it in to the computer.

11. Connect your computer and devices to electrical outlets, and then turn them on.

    See the documentation that came with the drive for instructions on installing any software required for drive operation.

12. Enter system setup (see Entering System Setup) and select the appropriate **USB for FlexBay** option.

CD/DVD Drive

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

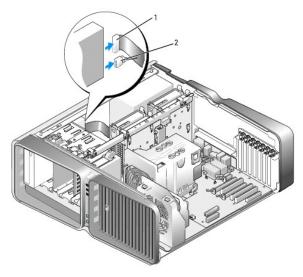
Removing a CD/DVD Drive

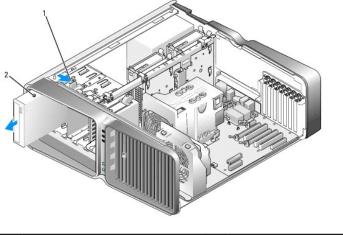
1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Remove the drive panel (see Removing the Drive Panel).

4. Disconnect the power and data cables from the back of the drive.

   NOTE: If you are uninstalling your only CD/DVD drive and will not replace it at this time, disconnect the data cable from the system board and set it aside.

1	data cable	2	power cable

5. Slide the drive-release latch towards the base of the computer to release the shoulder screw, and then slide the CD/DVD drive out of the drive bay.

1	drive-release latch	2	CD/DVD drive

6. Replace the drive panel (see Installing the Drive Panel).

7. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

8. Connect your computer and devices to electrical outlets, and then turn them on.

Installing a CD/DVD Drive

1. Follow the procedures in Before You Begin.

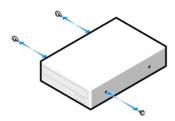
2. Remove the computer cover (see Removing the Computer Cover).

3. Remove the drive panel (see Removing the Drive Panel).

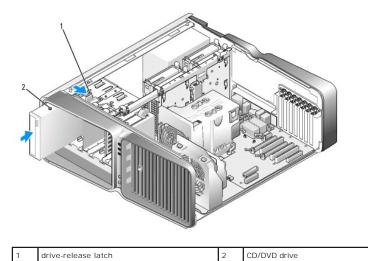
4. Remove the existing CD/DVD drive, if applicable (see Removing a CD/DVD Drive).

5. Prepare the CD/DVD drive for installation and check the documentation that accompanied the drive to verify that the drive is configured for your computer.

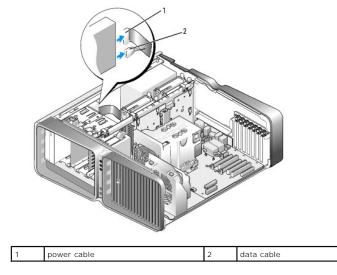
   NOTE: If you are installing an IDE drive, configure the drive for the cable select setting.

6. If no screws are attached to the drive, check the inside of the drive panel for screws and, if screws are present, attach the screws to the new drive.

1	CD/DVD drive	2	shoulder screws (3)

7. Gently slide the drive into the drive bay until you hear a click or feel the drive securely installed.

1	drive-release latch	2	CD/DVD drive

8. Attach the power and data cables to the CD/DVD drive.

   To locate the system board connector, see System Board Components.

1	power cable	2	data cable

9. Check all cable connections and fold cables out of the way to avoid blocking airflow between the fan and cooling vents.

10. Replace the drive panel (see Installing the Drive Panel).

11. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it in to the computer.

12. Connect your computer and devices to electrical outlets, and then turn them on.

    See the documentation that came with the drive for instructions on installing any software required for drive operation.

13. Enter system setup (see Entering System Setup) and select the appropriate **Drive** option.

Processor Airflow Shroud

CAUTION: Before you perform this procedure, follow the safety instructions located in the *Product Information Guide*.

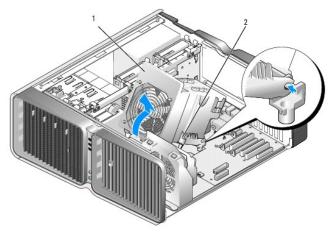
Removing the Processor Airflow Shroud

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

⚠ **CAUTION: The processor heat sink can get very hot during normal operation. Be sure that the heat sink has had sufficient time to cool before you touch it.**

3. Disconnect the fan cable from the FAN1_CPU connector on the system board (see System Board Components).

4. Loosen the two captive screws securing the processor airflow shroud to the chassis, then rotate the shroud back.

1	processor airflow shroud	2	captive screws (2)

NOTICE: The processor heat sink is attached to the processor airflow shroud. When you remove the airflow shroud, lay it upside down or on its side to avoid damaging the heatsink thermal interface.

5. Lift the processor airflow shroud out of the computer, and then set it aside.

Installing the Processor Airflow Shroud

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Align the hinge slots on the processor airflow shroud with the hinge guides on the system board.

4. Gently rotate the processor airflow shroud towards the front of the computer, and then tighten the two captive screws.

5. Connect the fan cable to the FAN1_CPU connector on the system board (see System Board Components).

6. Close the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

7. Connect your computer and devices to electrical outlets, and then turn them on.

Processor

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: Do not perform the following steps unless you are familiar with hardware removal and replacement. Performing these steps incorrectly could damage your system board. For technical service, see "Dell Technical Support Policy (U.S. Only)" in your *Owner's Manual*.

Removing the Processor

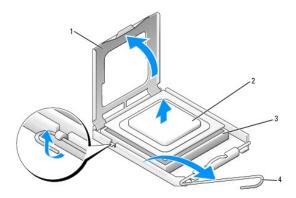
1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Disconnect the power cables from the POWER1 and POWER2 connectors (see System Board Components) on the system board.

4. Remove the airflow shroud (see Removing the Processor Airflow Shroud).

5. Push down and out on the socket release lever.

6. Lift the socket release lever and open the processor cover.

1	processor cover	2	processor	3	socket
4	socket release lever				

7. Remove the processor from the socket.

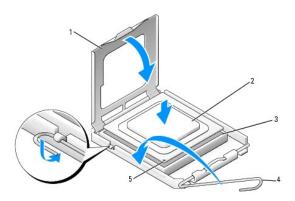
   Leave the release lever extended in the release position so that the socket is ready for the processor to be replaced.

Installing the Processor

NOTICE: Ground yourself by touching an unpainted metal surface on the back of the computer.

NOTICE: You must position the processor correctly in the socket to avoid permanent damage to the processor and the computer when you turn on the computer.

1. If the release lever on the socket is not fully extended, move it to that position.

2. Align the pin-1 corner of the processor and socket.

1	processor cover	2	processor	3	socket
4	socket release lever	5	socket pin-1 indicator		

NOTICE: Socket pins are delicate. To avoid damage, ensure that the processor is aligned properly with the socket, and do not use excessive force when you install the processor. Be careful not to touch or bend the pins on the system board.

3. Set the processor lightly in the socket and ensure that the processor is level in the socket. When the processor is positioned correctly, press it with minimal pressure to seat it.

4. When the processor is fully seated in the socket, close the processor cover.

5. Pivot the socket release lever back toward the socket and snap it into place to secure the processor.

6. Replace the processor airflow shroud (see Installing the Processor Airflow Shroud).

7. Reconnect the power cables to the POWER1 and POWER2 connectors (see System Board Components) on the system board.

8. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

9. Connect your computer and devices to electrical outlets, and then turn them on.

Fans

Removing the Card Fan

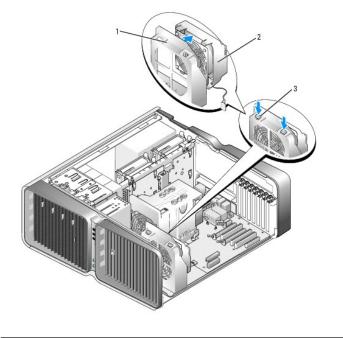
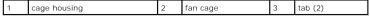
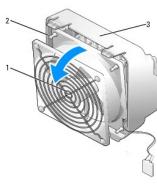
1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Remove any full-length expansion cards (see Removing PCI and PCI Express Cards).

4. Disconnect the fan cable from the FAN_CAGE connector on the system board (see System Board Components).

5. Press down on the two tabs along the top of the fan cage, then slide the fan cage back and out of the cage housing.

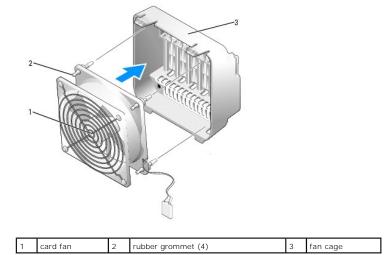
1	cage housing	2	fan cage	3	tab (2)

6. In succession, carefully pull on each corner of the fan to detach the rubber grommets securing the fan to the fan cage.

1	card fan	2	rubber grommet (4)	3	fan cage

Installing the Card Fan

NOTICE: Ensure the fan cable is correctly routed through the opening in the lower-right corner of the fan cage.

1. With the fan power cable oriented downward, align the rubber grommets in the fan with the holes in each corner of the fan cage, then pull the grommets through until they snap into place.

   NOTE: Airflow direction and orientation are shown on the side of the fan.

1	card fan	2	rubber grommet (4)	3	fan cage

2. Insert the tabs along the bottom of the fan cage into the corresponding slots on the cage housing, then rotate the fan cage forward until it snaps into place.

3. Connect the fan cable to the FAN_CAGE connector on the system board (see System Board Components).

4. Replace any expansion cards that you removed (see Installing PCI and PCI Express Cards).

5. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into your computer.

6. Connect your computer and devices to electrical outlets, and then turn them on.

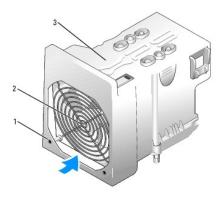
Removing the CPU Fan

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

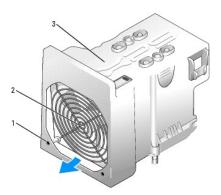
3. Disconnect the fan cable from the FAN1_CPU connector on the system board (see System Board Components).

4. Remove the processor airflow shroud (see Removing the Processor Airflow Shroud).

5. In succession, carefully pull on the two bottom corners of the fan to detach the rubber grommets securing the fan to the processor airflow shroud, the lift the fan to detach the two remaining grommets.

1	rubber grommet (4)	2	CPU fan	3	processor airflow shroud

Installing the CPU Fan

1. With the fan power cable oriented downward, align the rubber grommets in the fan with the holes in each corner of the processor airflow shroud, then pull the grommets through until they snap into place.

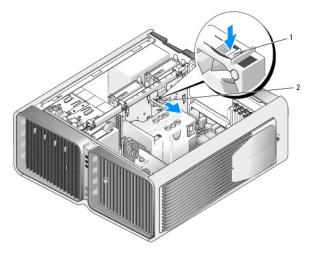
NOTE: Airflow direction and orientation are shown on the side of the fan.

1	rubber grommet (4)	2	CPU fan	3	processor airflow shroud

2. Replace the processor airflow shroud (see Installing the Processor Airflow Shroud).
3. Connect the fan cable to the FAN1_CPU connector on the system board (see System Board Components).
4. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into your computer.

5. Connect your computer and devices to electrical outlets, and then turn them on.

Removing the Optional Hard Drive Fan

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Remove all installed memory modules (see Removing Memory).
4. Disconnect the fan cable from the FAN_HDD connector on the system board (see System Board Components).
5. Press the release latch on the hard drive fan and slide it out from between the hard drive bays, then lift it from the computer.

1	hard-drive fan release latch	2	hard drive fan

Installing the Optional Hard Drive Fan

1. Slide the fan between the hard drive bays until it snaps into place.

2. Connect the fan cable to the FAN_HDD connector on the system board (see System Board Components).

3. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into your computer.

4. Connect your computer and devices to electrical outlets, and then turn them on.

System Board

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*

Removing the System Board

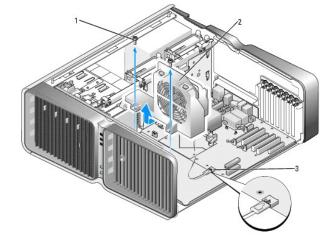
NOTICE: The system board and metal tray are connected and are removed as one piece.

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Disconnect the fan cable from the FAN_CAGE connector on the system board (see System Board Components).

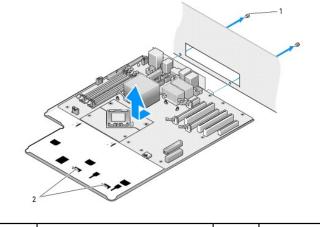
4. Remove any full-length expansion cards (see Removing PCI and PCI Express Cards).

5. Remove the two screws securing the card fan assembly, then remove the assembly and set it aside.

1	screw (2)	2	card fan assembly	3	fan connector

6. Remove any additional components that may restrict access to the system board.

7. Disconnect all cables from the system board.

NOTICE: If you are replacing the system board, visually compare the replacement system board to the existing system board to make sure that you have the correct part.

8. Remove the two screws securing the system board assembly to the chassis, then pull on the two tabs to slide the system board assembly towards the front of the computer.

1	screw (2)	2	tabs

NOTICE: The system board and metal tray are connected and are removed as one piece.

9. Carefully, lift the system board assembly up and out of the computer.

Installing the System Board

NOTICE: The system board and metal tray are connected and are installed as one piece.

NOTICE: If you are replacing the system board, visually compare the replacement system board to the existing system board to make sure that you have the correct part.

NOTE: Some components and connectors on replacement system boards may be in different locations than corresponding connectors on the existing system board.

NOTE: Jumper settings on replacement system boards are preset by the factory.

1. Transfer components from the existing system board to the replacement system board, if applicable.
2. Orient the system board assembly by aligning the notches on the bottom of the assembly with the tabs on the computer.
3. Slide the system board assembly toward the back of the computer until the assembly clicks into place.
4. Replace the two screws to secure the system board assembly to the chassis.
5. Align the screw holes on the card fan assembly with the screw holes on the system board assembly, then replace the two screws to secure the card fan assembly.
6. Connect the fan cable to the FAN_CAGE connector on the system board (see System Board Components).
7. Replace any expansion cards that you removed (see Installing PCI and PCI Express Cards).
8. Replace any additional components that you removed from the system board.
9. Reconnect all cables to the system board.
10. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into your computer.

11. Connect your computer and devices to electrical outlets, and then turn them on.
12. Flash the system BIOS, as needed.

    NOTE: For information on flashing the system BIOS, see **support.dell.com**.

Power Supply

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Removing the Power Supply

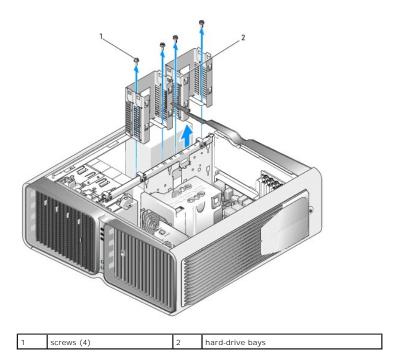
1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).

NOTICE: Note the location and ID of each power connector before disconnecting the power supply cables.

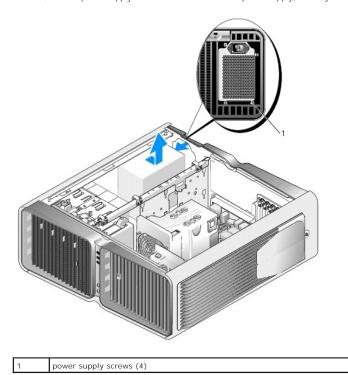
3. Follow the DC power cables that stem from the power supply and disconnect each connected power cable.

    NOTE: Note the routing of the power cable bundles as you disconnect them. You must route these cables properly when you replace them to prevent them from being pinched or crimped.

4. Remove all hard drives installed in the interior hard-drive bays (see Removing a Hard Drive).
5. Remove the optional hard-drive fan, if applicable (see Removing the Optional Hard Drive Fan).
6. Remove the two screws that attach each hard-drive bay.
7. Remove the hard-drive bays from the chassis.

1	screws (4)	2	hard-drive bays

8. Remove the four screws that attach the power supply to the back of the computer chassis.

9. Gather the power supply bundles that stem from the power supply, for easy removal.

1	power supply screws (4)

10. Slide the power supply towards the front of the computer to free it from the securing tabs on the computer chassis.

11. Slide the power supply toward the hard-drive bay area, so that it will clear the protruding lip of the chassis and lift the power supply from the computer.

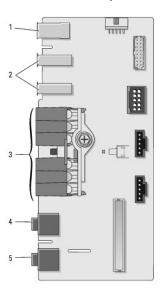
Installing the Power Supply

1. Slide the power supply into place, ensuring that the tabs on the rear wall of the computer chassis latch into place.
2. Replace the four screws that secure the power supply to the back of the computer chassis.
3. Replace the two hard-drive bays.
4. Replace all hard drives installed in the interior hard-drive bays (see Installing a Hard Drive).
5. Replace the optional hard-drive fan, if applicable (see Installing the Optional Hard Drive Fan).
6. Reattach each of the DC power cables that were previously connected, carefully rerouting them as you found them.
7. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

8. Connect your computer and devices to electrical outlets, and then turn them on.

Front I/O Panel

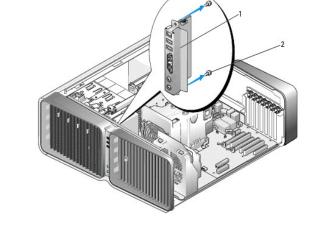
Front I/O-Panel Components

1	IEEE 1394 connector	2	USB 2.0 ports (2)	3	diagnostic, hard-drive access, and network integrity lights
4	headphone connector	5	microphone connector		

Removing the Front I/O Panel

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Remove any full-length expansion cards (see Removing PCI and PCI Express Cards).

NOTICE: Carefully note the routing of each cable before you disconnect it, so that you are sure to re-route cables correctly. An incorrectly routed or a disconnected cable could lead to computer problems.

4. Remove the processor airflow shroud (see Removing the Processor Airflow Shroud).
5. Disconnect the front fan and the card fan from the system board.
6. Unscrew the two screws that hold the processor and card fan assembly in place and lift it away from the computer.
7. Disconnect the control-panel cable from the I/O panel connector by pulling the cable loop.

1	Front I/O panel	2	mounting screws (2)

8. Remove the two mounting screws from the I/O panel.
9. Lift to remove the I/O panel from the computer.

Installing the I/O Panel

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: Ensure that you replace all cables originally attached to the I/O panel or you computer may not function properly.

1. Follow the procedures in Before You Begin.
2. Remove the computer cover (see Removing the Computer Cover).
3. Align the screw holes on the I/O panel with the screw holes on the chassis, and then tighten the two mounting screws.
4. Connect the control-panel cable to the I/O panel connector.
5. Replace the processor and card fan assembly.
6. Connect the front fan and the card fan to the system board.
7. Replace the processor airflow shroud (see Installing the Processor Airflow Shroud).
8. Replace any full-length expansion cards (see Installing PCI and PCI Express Cards) that were uninstalled during removal of the I/O panel.
9. Replace the computer cover (see Replacing the Computer Cover).

Battery

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

Replacing the Battery

A coin-cell battery maintains computer configuration, date, and time information. The battery can last several years.

If you have to repeatedly reset time and date information after turning on the computer, replace the battery.

 CAUTION: A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

To replace the battery:

1. Record all the screens in system setup (see System Setup) so that you can restore the correct settings after the new battery has been installed.
2. Follow the procedures in Before You Begin.
3. Open the computer cover (see Removing the Computer Cover).
4. Locate the battery socket (see System Board Components).

NOTICE: If you pry the battery out of its socket with a blunt object, be careful not to touch the system board with the object. Ensure that the object is inserted between the battery and the socket before you attempt to pry out the battery. Otherwise, you may damage the system board by prying off the socket or by breaking circuit traces on the system board.

5. Remove the battery by prying it out of its socket with your fingers.
6. Insert the new battery (CR2032) into the socket with the side labeled "+" facing up, and press the battery into place.
7. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network port or device and then plug it into the computer.

8. Connect your computer and devices to electrical outlets, and then turn them on.
9. Enter system setup (see System Setup) and restore the settings you recorded in step 1.
10. Properly dispose of the old battery. See the *Product Information Guide* for battery disposal information.

Computer Stand

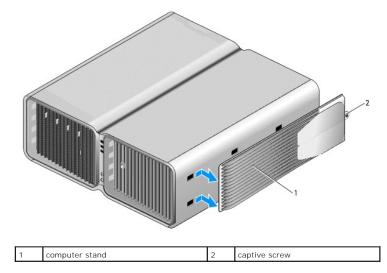
Removing the Computer Stand

 CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: Your computer is heavy and can be difficult to maneuver. Seek assistance before attempting to lift, move, or tilt the computer and always lift correctly to avoid injury; avoid bending over while lifting.

CAUTION: The computer stand should be installed at all times to ensure maximum system stability. Failure to install the stand could result in the computer tipping over, potentially resulting in bodily injury or damage to the computer.

1. Follow the procedures in Before You Begin.
2. Loosen the captive screw securing the stand to the base of the computer.
3. Gently slide the stand back, towards the rear of the computer, then pull the stand away from the computer to remove it.

1	computer stand	2	captive screw

Attaching the Computer Stand

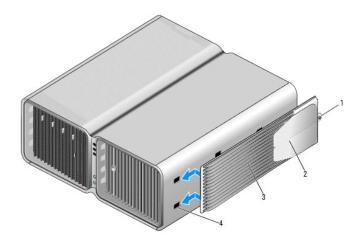
CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

CAUTION: Your computer is heavy and can be difficult to maneuver. Seek assistance before attempting to lift, move, or tilt the computer and always lift correctly to avoid injury; avoid bending over while lifting.

CAUTION: The computer stand should be installed at all times to ensure maximum system stability. Failure to install the stand could result in the computer tipping over, potentially resulting in bodily injury or damage to the computer.

1. Follow the procedures in Before You Begin.
2. Remove the thumb screw that is installed on the base of the computer.

NOTE: If the thumb screw is not already installed in the stand, it has been packaged separately.

3. Insert the six alignment tabs into the corresponding slots on the base of the computer, then slide the stand forward until all six tabs catch in the slots.
4. Ensure that the screw hole on the stand is aligned with the screw hole on the base of the computer.
5. Insert the captive screw into the screwhole, then tighten the screw to secure the stand to the base of the computer.

1	captive screw	2	stabilizing feet (closed)	3	computer stand
4	slots (6)				

6. With the help of an assistant, carefully set the computer upright.

7. Carefully, lift the rear of the computer and slide the stabilizing feet outward into the open position.

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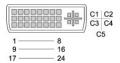
Pin Assignments for I/O Connectors

Dell™ XPS™ M2010 Service Manual

USB Connector

Pin	Signal
1	USB5V+
2	USBP−
3	USBP+
4	GND

DVI-I Connector

Pin	Signal	Pin	Signal
1	TMDS DATA2−	13	TMDS DATA3+
2	TMDS DATA2+	14	+5V
3	TMDS DATA2/4 SHLD	15	GND (FOR +5V)
4	TMDS DATA4−	16	HOT PLUG DETECT
5	TMDS DATA4+	17	TMDS DATA0−
6	DDC CLK	18	TMDS DATA0+
7	DDC DATA	19	TMDS DATA0/5 SHLD
8	ANALOG VERT SYNC	20	TMDS DATA5−
9	TMDS DATA1−	21	TMDS DATA5+
10	TMDS DATA1+	22	TMDS CLK SHLD
11	TMDS DATA1/3 SHLD	23	TMDS CLK+
12	TMDS DATA3−	24	TMDS CLK−

Pin	Signal
C1	ANALOG RED VID OUT
C2	ANALOG GRN VID OUT
C3	ANALOG BLU VID OUT
C4	ANALOG HOR SYNC
C5	ANALOG COM GND RET

S-Video TV-Out Connector

S-Video	
Pin	**Signal**
1	GND
2	GND
3	DLUMA-L
4	DCRMA-L

Composite Video	
Pin	**Signal**
5	NC
6	DCMPS-L
7	GND

IEEE 1394 Connector

Pin	Signal
1	TPB−
2	TPB+
3	TPA−
4	TPA+

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Technical Specifications

Dell™ XPS™ 700 Service Manual

Processor	
Processor type	Intel® Pentium® D or Extreme Edition with dual-core technology **NOTE:** Not all Pentium processors support dual-core technology.
Cache	at least 1 MB

Memory	
Type	533- and 667-MHz DDR2 unbuffered SDRAM
Memory connectors	four
Memory capacities	256 MB, 512 MB, 1 GB, or 2 GB non-ECC
Minimum memory	512 MB
Maximum memory	4 GB or 8 GB **NOTE:** See Addressing Memory Configurations to verify the amount of memory available to the operating system.
BIOS address	F0000h

Computer Information	
Chipset	Nvidia C19/MCP55
DMA channels	five
Interrupt levels	24
BIOS chip (NVRAM)	4 Mb
NIC	integrated network interface capable of 10/100/1000 communication
System clock	800- or 1066-MHz data rate (varies according to processor)

Video	
Type	PCI Express

Audio	
Type	HDA 7.1 channel

Expansion Bus	
Bus type	PCI 32-bit PCI Express x1 and x16
Bus speed Bus throughput	PCI: 33 MHz PCI Express: 2.5 Gb/s raw bandwidth (bidirectional) per lane PCI Express: x1 slot bidirectional speed — 500 MB/s x16 slot bidirectional speed — 8 GB/s
PCI	

connector	three
connector size	120 pins
connector data width (maximum)	32 bits
PCI Express	**NOTE:** If a graphics card is installed in each of the PCI Express x16 card slots in the dual-graphics configuration, the PCI Express x1 card slot is not accessible for use.
connector	one x1
connector size	36 pins
connector data width (maximum)	1 PCI Express lane
PCI Express	
connector	one x8
connector size	98 pins
connector data width (maximum)	4 PCI Express lanes
PCI Express	
connector	two x16
connector size	164 pins
connector data width (maximum)	16 PCI Express lanes

Drives	
Available devices	**Serial ATA drive, floppy drive, memory devices, CD drive, CD-RW drive, DVD drive, DVD+/-RW drive, CD-RW/DVD combo drive, and media card reader**
Externally accessible:	two 3.5-inch drive bays four 5.25-inch drive bays
Internally accessible:	four 3.5-inch drive bays for hard drives

Connectors	
External connectors:	
IEEE 1394	front and back-panel 6-pin serial connectors
Network adapter	RJ45 connector
PS/2 (keyboard and mouse)	two 6-pin mini-DIN
Serial	9-pin connector
USB	two front-panel, six back-panel, and two internal USB 2.0–compliant connectors
System board connectors:	
IDE drive	one 40-pin connector
Serial ATA	six 7-pin connectors
Floppy drive	34-pin connector
Fan	four 5-pin connectors
PCI	three 120-pin connectors
PCI Express x1	36-pin connector
PCI Express x8	98-pin connector
PCI Express x16	two 164-pin connectors

Controls and Lights	
Power control	push button
Power light	green light — Blinking green in sleep state; solid green for power-on state (see Power Lights). amber light — Blinking amber indicates a problem with an installed device; solid amber indicates an internal power problem (see Power Lights).
Hard-drive access light	green
Link integrity light (on integrated network adapter)	green light — A good connection exists between a 10-Mbps network and the computer. orange light — A good connection exists between a 100-Mbps network and the computer.

	yellow light — A good connection exists between a 1-GB (1000-Mbps) network and the computer. off (no light) — The computer is not detecting a physical connection to the network.
Activity light (on integrated network adapter)	yellow blinking light when there is activity on the network; if there is not any network activity, the light will be off
Diagnostic lights	four lights on the front panel (see Diagnostic Lights)
Standby power light	AUXPWR on the system board
front panel LEDs	eight multi-colored LEDs provide illumination for the front of the computer **NOTE:** The color of the front panel LEDs can be adjusted in system setup (see System Setup).
back panel LEDs	two multi-colored lights provide illumination for the I/O panel on the back of the computer **NOTE:** The color of the back panel LEDs can be adjusted in system setup (see System Setup).

Power	
DC power supply:	**CAUTION: To reduce the risk of fire, electric shock, or injury, do not overload an electrical outlet, power strip, or convenience receptacle. The total ampere rating of all products plugged into an electrical outlet, power strip, or other receptacle should not not exceed 80 percent of the branch circuit rating.**
Wattage	750 W or 1 KW
Heat dissipation	750 W: 1150 BTU/hr or **1 KW:** 1075 BTU/hour
Voltage (see the safety instructions located in the *Product Information Guide* for important voltage setting information)	auto-sensing power supply—90 V to 265 V at 50/60 Hz
Backup battery	3-V CR2032 lithium coin cell

Physical l	
Height	
Without stand	55.5 cm (21.9 inches)
With stand	57.2 cm (22.5 inches)
Width	
Without stand	21.9 cm (8.6 inches)
With stand	35.6 cm (14.0 inches)
Depth	59.4 cm (23.4 inches)
Weight	
Typical configuration	21.7 kg (47.8 lb)
Maximum configuration	25.6 kg (56.4 lb)

Environmental	
Temperature:	
Operating	10° to 35°C (50° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
Relative humidity	20% to 80% (noncondensing)
Maximum vibration:	
Operating	0.25 G at 3 to 200 Hz at 0.5 octave/min
Storage	0.5 G at 3 to 200 Hz at 1 octave/min
Maximum shock:	
Operating	bottom half-sine pulse with a change in velocity of 20 inches/sec (50.8 cm/sec)

Storage	27-G faired square wave with a velocity change of 200 inches/sec (508 cm/sec)
Altitude:	
Operating	−15.2 to 3048 m (−50 to 10,000 ft)
Storage	−15.2 to 10,668 m (−50 to 35,000 ft)

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Subwoofer

Dell™ XPS™ M2010 Service Manual

 CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

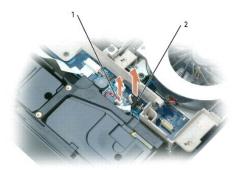
 NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

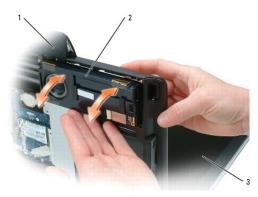
Removing the Subwoofer

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Remove the two M2 x 4-mm screws on the subwoofer cover. The screws are inside the battery bay.
3. Slide the subwoofer cover toward the battery bay, then lift the cover off.

1	subwoofer cover	2	M2 x 4-mm screws (2)		

4. Turn the computer over and open the display (see Opening the Display).
5. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
6. Remove the cosmetic covers (see Removing the Cosmetic Covers).
7. Remove the top cover (see Removing the Top Cover).
8. Disconnect the subwoofer cable from the connector on the system board (JWOFR).
9. Disconnect the cable for the internal card with Bluetooth® wireless technology from the connector on the system board (JBT).

1	subwoofer cable and system board connector	2	cable for the card with Bluetooth technology and system board connector		

10. To easily access the bottom of the computer, lean the display backwards and lay it on a flat surface so that the base is facing you.

1	computer base	2	subwoofer	3	display

11. Push the subwoofer through the top of the computer to remove the subwoofer from its compartment.

12. Detach the internal card with Bluetooth wireless technology (see Removing the Internal Card with Bluetooth Wireless Technology). Set the card and cable aside to adhere them to the new subwoofer.

Replacing the Subwoofer

1. Adhere the card with Bluetooth wireless technology (with cable attached) to the new subwoofer.

2. Insert the new subwoofer into the computer base, pushing it firmly into place.

   Ensure that the subwoofer cable reaches through to the system board.

3. Slide the subwoofer cover into place, and attach the subwoofer cover to the battery bay using two M2 x 4-mm screws.

4. Lift the display and place the computer base flat on the work surface.

5. Connect the subwoofer cable to the connector on the system board (JWOFR).

6. Connect the cable for the internal card with Bluetooth wireless technology to the connector on the system board (JBT).

7. Replace the top cover (see Removing the Top Cover).

8. Replace the cosmetic covers (see Removing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

9. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

10. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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System Board Assembly

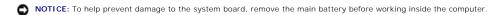
Dell™ XPS™ M2010 Service Manual

 Removing the System Board Assembly
 Replacing the System Board Assembly

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

The system board's BIOS chip contains the Service Tag, which is also visible on a barcode label on the bottom of the computer in the battery compartment. The replacement kit for the system board includes a CD that provides a utility for transferring the Service Tag to the replacement system board.

Removing the System Board Assembly

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

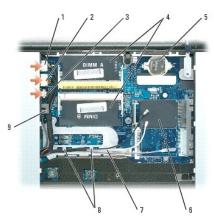
1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.

2. Remove the memory module cover (see Removing the Memory Module Cover).

3. Remove the memory module(s) (see Removing the Memory Module). Set the memory module(s) aside to install on the new system board.

4. Disconnect the mini card antenna cables from the mini card, unhook the cables from the routing hooks, and remove the mini card (see Removing a Mini Card). Set the mini card aside to install on the new system board.

5. Disconnect the cables from the system board connectors for the speakers, suspend and solenoid function, and infrared, and unhook the cables from the routing hook.

6. Remove the coin cell battery (see Removing the Coin-Cell Battery). Set the battery aside to install on the new system board.

1	speaker cable	2	infrared cable	3	suspend and solenoid function cable
4	memory modules	5	coin-cell battery	6	mini card
7	mini card antenna cables	8	routing hooks for mini card antenna cables	9	routing hook

7. Turn the computer over and open the display (see Opening the Display).

8. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.

9. Remove the cosmetic covers (see Removing the Cosmetic Covers).

10. Remove the top cover (see Removing the Top Cover).

11. Remove the hard drive(s) (see Removing a Hard Drive).

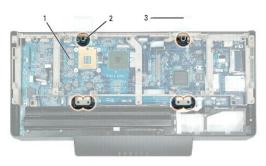
12. Remove the system fans (see Removing a System Fan).

13. Remove the video card/thermal-cooling assembly (see Removing the Video Card/Thermal-Cooling Assembly).

14. Remove the processor thermal-cooling assembly (see Removing the Processor Thermal-Cooling Assembly).

15. Disconnect the solenoid cable on the solenoid card.

1	system board	2	solenoid cable	3	solenoid card

16. Remove the six M2.5 x 8-mm screws that attach the left and right hinge arms to the computer base.

1	system board	2	M2.5 x 8-mm screws (6)	3	hinge arms (2)

17. Lift the computer base and carefully thread the solenoid and video cables through the opening in the bottom of the computer base. These cables are attached to the right hinge arm.

18. Remove the hinge arms and display from the computer base and set the display aside.

1	video cable	2	solenoid cable	3	opening in computer base

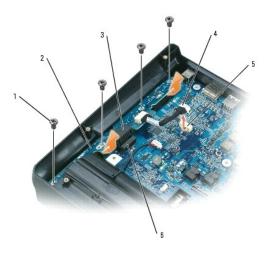
19. Remove the frame (see Removing the Frame).

20. Remove the modem (see Removing the Modem).

21. Remove the USB/audio port board from the system board:

    a. Disconnect the USB/audio cable from the system board.

    b. Remove the four M2.5 x 5-mm screws that attach the USB/audio port board to the system board.

    c. Grasp the black connector on the USB/audio port board with one hand, hold the black connector on the system board in place with the other hand, and pull up and angle the USB/audio port board out of the computer.

1	M2.5 x 5-mm screws (4)	2	USB/audio port board	3	black connector on USB/audio port board
4	USB/audio cable	5	cable connector on system board	6	black connector on system board

22. Disconnect the microphone cable from the system board.

23. Disconnect the keyboard cable from the system board. Pull the top of the connector out, then remove the flat cable.

24. Disconnect the subwoofer cable from the system board.

25. Disconnect the cable for the internal card with Bluetooth® wireless technology from the system board.

1	microphone cable (JMIC)	2	keyboard cable (JKBDK)	3	subwoofer cable (JWOFR)
4	cable for internal card with Bluetooth wireless technology (JBT)				

26. Remove the four M2.5 x 5-mm screws marked with white arrows on the system board.

1	arrows and M2.5 x 5-mm screws (4)				

27. Pull out slightly on the back right corner of the computer base to release the connectors on the system board from the base.

28. Lift the left side of the system board and slowly ease the connectors out of the computer base to remove the system board.

1	system board				

Replacing the System Board Assembly

1. Insert the system board, slowly easing the connectors into their access holes on the back and side of the computer base.

Ensure that the cables for the microphone and keyboard are not underneath the system board.

2. Replace the four M2.5 x 5-mm screws marked with white arrows on the system board.

3. Replace the USB/audio port board:

   a. Insert the USB/audio port board at an angle and push down on the black connector to snap the board into place.

   b. Attach the USB/audio port board to the system board with four M2.5 x 5-mm screws.

   c. Connect the USB/audio cable to the connector on system board (JAUDIO).

4. Connect the cable for the internal card with Bluetooth wireless technology to the connector on the system board (JBT).

5. Connect the subwoofer cable to the connector on the system board (JWOFR).

6. Connect the keyboard cable to the connector on the system board (JKBDK). Place the flat cable in the connector, then close the connector.

7. Connect the microphone cable to the connector on the system board (JMIC).

8. Replace the modem (see Replacing the Modem).

9. Thread the solenoid and video cables through the opening in the computer base.

10. Seat the computer base onto the hinge arms, aligning the screw holes in the computer base with those in the hinge arms.

11. Connect the solenoid cable to the solenoid card.

12. Replace the frame (see Replacing the Frame).

13. Replace the processor thermal-cooling assembly (see Replacing the Processor Thermal-Cooling Assembly).

14. Replace the video card/thermal-cooling assembly and connect the video cable to the video card (see Replacing the Video Card/Thermal-Cooling Assembly).

15. Replace the system fans (see Replacing a System Fan).

16. Replace the hard drive(s) (see Replacing a Hard Drive).

17. Replace the top cover (see Replacing the Top Cover).

18. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

19. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

20. Turn the computer upside down.

21. Replace the coin cell battery (see Replacing the Coin-Cell Battery).

22. Connect the cables to the system board connectors for the speaker (JSPK), suspend and solenoid function (JHING), and infrared (JCIR).

23. Replace the mini card antenna cables and card (see Replacing a Mini Card).

24. Replace the memory module(s) and cover (see Replacing the Memory Module).

25. Replace the system battery (see Replacing the System Battery).

26. Turn the computer over and open the display (see Opening the Display).

27. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base.

NOTICE: Before turning on the computer, ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

28. Turn on the computer.

NOTE: If you use a BIOS update program CD to flash the BIOS, press <F12> before inserting the CD so that you can set up the computer to boot from a CD this one time only. Otherwise, you must enter the system setup program to change the default boot order.

29. Insert the flash BIOS update program CD that accompanied the replacement system board assembly into the optical drive. Follow the instructions that appear on the screen. See Flashing the BIOS for further information.

NOTE: The Service Tag is located in the battery compartment.

To update the BIOS on the new system board with the computer Service Tag, press <F2> during POST to enter the system setup program. See Flashing the BIOS.

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System Setup

Dell™ XPS™ 700 Service Manual

Overview

Use system setup:

- To change the system configuration information after you add, change, or remove any hardware in your computer
- To set or change a user-selectable option such as the user password
- To read the current amount of memory or set the type of hard drive installed

Before you use system setup, it is recommended that you write down the system setup screen information for future reference.

 NOTICE: Do not change the settings in system setup unless you are an expert computer user. Certain changes can cause your computer to work incorrectly.

Entering System Setup

1. Turn on (or restart) your computer.

2. When the DELL logo appears, press <F2> immediately.

    NOTE: Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F2> in even intervals until the system setup screen appears.

   If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop, then shut down your computer and try again.

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the options list, the active options field, and key functions.

<table>
<tr>
<td rowspan="2">Options List — This field appears on the left side of the system setup window. The field is a scrollable list containing features that define the configuration of your computer, including installed hardware, power conservation, and security features.

Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the Options Field displays more information about that option and the option's current and available settings.</td>
<td>Options Field — This field appears on the right side of the system setup window and contains information about each option listed in the Options List. In this field you can view information about your computer and make changes to your current settings.

Press the left- and right-arrow keys to highlight an option. Press <Enter> to make that selection active and return to the Options List.

NOTE: Not all settings listed in the Options Field are changeable.</td>
</tr>
<tr>
<td>Key Functions — This field appears below the Options Field and lists keys and their functions within the active system setup field.</td>
</tr>
</table>

System Setup Options

NOTE: Depending on your computer and installed devices, the items listed in this section may not appear, or may not appear exactly as listed.

System	
Processor Info	Identifies the processor type, clock speed, bus speed, L2 cache, ID, and whether the processor is multiple core capable, supports Hyper-Threading and supports 64-bit technology.
Memory Info	Identifies the memory type, speed, and channel mode (dual or single) by DIMM slot location.
PCI Info	Indicates the expansion card type by slot location.
Date/Time	Displays current date and time settings.
Boot Sequence	The computer attempts to boot from the sequence of devices specified in this list. **NOTE:** If you insert a boot device and restart the computer, this option appears in the system setup menu. To boot from a USB memory device, for example, select the USB device and move it so that it becomes the first device in the boot sequence.

Drives	
Diskette Drive (**Internal** default)	Enables and disables the floppy drive attached to the DSKT connector on the system board and sets read permissions for the drive. • **Off** — All floppy drives are disabled. • **USB** — USB floppy drives are enabled • **Internal** — The integrated floppy drive is enabled. • **Read Only** — The integrated floppy drive is enabled with read-only access. **NOTE:** Operating systems with USB support will recognize USB floppy drives regardless of this setting.
SATA Drives 0 through 5 (**On** default)	Enables or disables drives attached to the SATA connectors on the system board. • **Off** — A device attached to the interface is not usable. • **On** — A device attached to the interface is usable. • **RAID On** - A device attached to the interface is configured for RAID (see "About Your RAID Configuration" in your *Owner's Manual*).
PATA Drives 0 through 1 (**On** default)	Enables or disables drives attached to the ATA connectors on the system board, and lists the controller details. • **Off** — A device attached to the interface is not usable. • **On** — A device attached to the interface is usable.
SMART Reporting (**Off** default)	Determines whether hard-drive errors for internal drives are reported during system startup. • **Off** — Errors are not reported. • **On** — Errors are reported.

Onboard Devices	
Integrated NIC (**On** default)	Enables or disables the integrated network interface controller (NIC). • **Off** — The integrated NIC is disabled. • **On** — The integrated NIC is enabled. • **On w/PXE** — The integrated NIC is on (with PXE enabled).

	NOTE: PXE is required only if you are booting to an operating system located on another computer. If a boot routine is not available from the remote system, the computer attempts to boot from the next device listed in the boot sequence.
Integrated Audio (**On** default)	Enables or disables the onboard audio controller. - **Off** — Integrated audio is disabled. - **On** — Integrated audio is enabled.
USB Controller (**On** default)	Enables or disables the internal USB controller. - **Off** — The USB controller is disabled. - **On** — The USB controller is enabled. - **No Boot** — The USB controller is enabled; however, the BIOS will not recognize USB storage devices. **NOTE:** Operating systems with USB support will recognize USB storage devices regardless of the **No Boot** setting.
1394 Controller (**On** default)	Enables or disables the integrated IEEE 1394 controller. - **Off** — The 1394 controller is disabled. - **On** — The 1394 controller is enabled.
Serial Port #1 (**Auto** default)	Disables or selects the address for the integrated serial port and determines how the serial port operates. - **Off** — The serial port is disabled. - **Auto** — The BIOS selects between COM1 and COM3; if both resources are in use the port is disabled. - **COM1** — The port is configured at 3F8h with IRQ 4. - **COM3** — The port is configured at 3E8h with IRQ 4.
PS/2 Mouse Port (**On** default)	Enables or disables the onboard PS/2-compatible mouse controller. - **Off** — The PS/2 legacy mouse port is disabled. - **On** — The PS/2 legacy mouse port is enabled.
LED color	Adjusts the color of the front and back LEDs (see About Your XPS Computer).

Performance	
Hyper-Threading (**On** default)	Specifies whether each physical processor appears as one or two logical processors. - **Off** — Hyper-Threading technology is disabled. - **On** — Hyper-Threading technology is enabled. **NOTE:** If your processor does not supports Hyper-Threading, this option does not appear in the **Options List**.
Multiple CPU Core (**On** default)	Specifies whether the processor has more than one core enabled. - **Off** — Multiple CPU core technology is disabled. - **On** — Multiple CPU core technology is enabled. **NOTE:** The performance of some applications may improve with an additional core enabled.
CPU Clock Speed	Provides limited capability to adjust the CPU clock speed so that the CPU operates at a different frequency than that designated in the manufacturer's design specifications.

	NOTICE: Dell does not recommend operating the CPU at a frequency that is greater than the manufacturer's design specifications (also referred to as *over-clocking*). Operating the CPU in this manner may cause your system to shut down unexpectedly, may result in a loss of data, and may reduce the operational life of the processor. If the system shuts down unexpectedly or is unstable, select a lower CPU operating frequency. **NOTE:** Press <Alt><F> to return the processor back to the default setting.
HDD Acoustic Mode (**Bypass** default)	Determines the acoustic mode at which the hard drive operates. • **Bypass** — Do nothing (needed for older drives). • **Quiet** — The hard drive operates at its most quiet setting. • **Suggested** — Allow the hard drive manufacturer to select the mode. • **Performance** — **T**he hard drive operates at its maximum speed. **NOTE:** Switching to performance mode may cause an increase in noise produced by the drive, but does not affect the drive's performance. **NOTE:** Changing the acoustics setting does not alter your hard drive image.

Security	
Admin Password (**Not Set** default)	Used to prohibit an unauthorized user from changing any configuration settings in the system setup.
System Password (**Not Set** default)	Used to prohibit an unauthorized user from booting to the operating system.
Password Changes (**Unlocked** default)	This option locks the system password field with the administrator (admin) password. **NOTE:** When the system password field is locked, you can no longer disable password security by pressing <Ctrl><Enter> when the computer starts.
Execute Disable (**On** default)	Enables or disables Execute Disable Memory Protection technology. • **Off** — Execute Disable Memory Protection technology is disabled. • **On** — Execute Disable Memory Protection technology is enabled.

Power Management	
AC Recovery (**Off** default)	Specifies how the computer will behave when AC power is restored after an AC power loss. • **Off** — The system stays off after AC power is restored. • **On** — The system powers on after AC power is restored. • **Last** — The system returns to the previous state after AC power is restored.
Auto Power On (**Off** default)	Disables or selects when to automatically turn on the computer. • **Off** — Do not use the **Auto Power Time**. • **Everyday** — Turn the computer on every day at the time set in **Auto Power Time**. • **Weekdays** — Turn the computer on Monday through Friday at the time set in **Auto Power Time**.

	NOTE: This feature does not work if you turn off your computer using a power strip or surge protector.
Auto Power Time	Specifies the time to automatically turn on the computer. Change the time to automatically turn on the computer by pressing the up- or down-arrow key to increase or decrease the numbers, or type the numbers in the appropriate time field. **NOTE:** This feature does not work if you turn off your computer using a power strip or surge protector.
Suspend Mode (**S3** default)	Specifies the power management suspend mode. - **S1** — The computer resumes more quickly from sleep mode. - **S3** — The computer conserves more power when not in use (system memory remains active).

Maintenance	
Service Tag	Displays the system service tag.
Load Defaults	This setting restores the computer's factory-installed default settings. - **Cancel** — Do not restore factory-installed default settings. - **Continue** — Restore factory-installed default settings.
Event Log	Displays the system event log. - **Mark all entrie**s — Mark all event log entries as read (R). - **Clear log** — Clear all event log entries. **NOTE:** Once an event log entry is marked as read (R) that entry cannot be marked as unread (U).

POST Behavior	
Fastboot (**On** default)	Enables or disables the option to speed up the boot process by skipping some compatibility tests. - **Off** — Do not skip any steps in the boot process. - **On** — Boot quickly.
Numlock Key (**On** default)	Enables or disables the numerical and mathematical features of the rightmost bank of keys on the keyboard. - **Off** — Right keypad keys function as arrows. - **On** — Right keypad keys function as numbers.
POST Hotkeys (**Setup & Boot Menu** default)	Specifies the function keys to display on the screen when the computer starts. - **Setup & Boot Menu** — Display both messages (F2=Setup and F12=Boot Menu). - **Setup** — Display the setup message only (F2=Setup). - **Boot Menu** — Display the **Quickboot** message only (F12=Boot Menu). - **None** — Neither message is displayed.
Keyboard Errors (**Report** default)	Enables or disables keyboard error reporting when the computer starts. - **Report** — Display any keyboard errors. - **Do not report** — Do not display any keyboard errors.

Boot Sequence

This feature allows you to change the boot sequence for the bootable devices installed on your computer.

Option Settings

- **Diskette Drive —** The computer attempts to boot from the floppy drive. If the floppy disk in the drive is not bootable, if no floppy disk is in the drive, or if there is no floppy drive installed in the computer, the computer attempts to boot from the next bootable device in the boot sequence.
- **Hard Drive** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer attempts to boot from the next bootable device in the boot sequence.
- **CD Drive** — The computer attempts to boot from the CD drive. If no CD is in the drive, or if the CD has no operating system, the computer attempts to boot from the next bootable device in the boot sequence.
- **USB Flash Device —** Insert the memory device into a USB port and restart the computer. When `F12 = Boot Menu` appears in the upper-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.

NOTE: To boot to a USB device, the device must be bootable. To make sure that your device is bootable, check the device documentation.

NOTE: An error message is generated only after the computer attempts to boot from every device in the boot sequence and no operating system is found.

Changing Boot Sequence for the Current Boot

You can use this feature, for example, to tell the computer to boot from the CD drive so that you can run the Dell Diagnostics on the *Dell ResourceCD*, but you want the computer to boot from the hard drive when the diagnostic tests are complete. You can also use this feature to restart your computer to a USB device such as a floppy drive, memory key, or CD-RW drive.

NOTE: If you are booting to a USB floppy drive, you must first set the floppy drive to **OFF** in system setup (see System Setup).

1. If you are booting to a USB device, connect the USB device to a USB connector (see Back View).
2. Turn on (or restart) your computer.
3. When the DELL logo appears, press <F12> immediately.

   NOTE: Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals until the **Boot Device Menu** appears.

   If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop, then shut down your computer and try again.

4. At the **Boot Device Menu**, use the up- and down-arrow keys or press the appropriate number on the keyboard to highlight the device that is to be used for the current boot only, and then press <Enter>.

   For example, if you are booting to a USB memory key, highlight **USB Flash Device** and press <Enter>.

NOTE: To boot to a USB device, the device must be bootable. To make sure that your device is bootable, check the device documentation.

Changing Boot Sequence for Future Boots

1. Enter system setup (see Entering System Setup).
2. Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the menu.

   NOTE: Write down your current boot sequence in case you want to restore it.

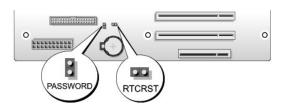
3. Press the up- and down-arrow keys to move through the list of devices.
4. Press the spacebar to enable or disable a device (enabled devices have a checkmark).
5. Press plus (+) or minus (–) to move a selected device up or down the list.

Clearing Forgotten Passwords

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTICE: This process erases both the system and setup passwords

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Locate the 2-pin password jumper (PASSWORD) on the system board (see System Board Components), then remove the jumper plug and set the plug aside.

4. Close the computer cover.

5. Connect your keyboard and mouse, then connect your computer and monitor to electrical outlets and turn them on.

6. After the Microsoft® Windows® desktop appears on your computer, turn the computer off:

   a. Click **Start**, then click **Turn Off Computer**.

   b. In the **Turn off computer** window, click **Turn off**.

   The computer performs a shutdown of the operating system, and then turns off.

   NOTE: Ensure that the computer is off and not in a power management mode. If you cannot shut down the computer using the operating system, press and hold the power button for 4 seconds.

7. Disconnect the keyboard and mouse, then disconnect the computer and monitor from their electrical outlets.

8. Press the power button on the computer to ground the system board.

9. Open the computer cover (see Removing the Computer Cover).

NOTICE: The password jumper plug must be reinstalled on the password jumper pins in order to enable the password feature.

10. Locate the 2-pin password jumper on the system board (see System Board Components), and then reinstall the jumper plug to enable the password feature.

11. Replace the computer cover (see Replacing the Computer Cover).

NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

12. Connect your computer and devices to electrical outlets, and then turn them on.

NOTE: In system setup (see Entering System Setup), both system and administrator password options appear as **Not Set**. The password feature is enabled but a password is not assigned.

Clearing CMOS Settings

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the *Product Information Guide*.

NOTE: This procedure does not clear or reset system and setup passwords.

1. Follow the procedures in Before You Begin.

2. Remove the computer cover (see Removing the Computer Cover).

3. Locate the password (PASSWORD) and CMOS (RTCRST) jumpers on the system board (see System Board Components).

4. Remove the password jumper plug, then place the plug on the CMOS jumper pins and wait approximately 5 seconds.

NOTICE: The password jumper plug must be reinstalled on the password jumper pins in order to enable the password feature.

5. Remove the jumper plug from the CMOS jumper pins, and then reinstall the plug on the password jumper pins to enable the password feature.

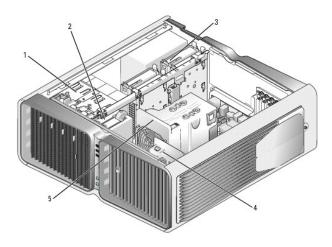
6. Close the computer cover (see Replacing the Computer Cover).

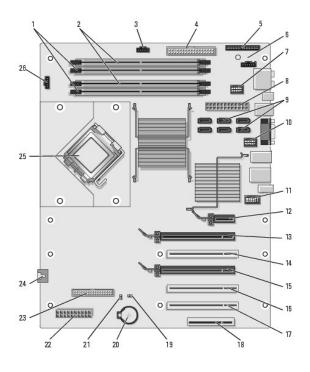
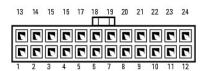
NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

7. Connect your computer and devices to electrical outlets, and then turn them on.

Technical Overview

Dell™ XPS™ 700 Service Manual

Inside View of Your Computer

1	CD/DVD drive bays (4)	2	floppy drive/media card reader	3	hard-drive bays (4)
4	card fan	5	front fan		

System Board Components

1	*white* memory module connectors (DIMM_1-2) support memory modules or memory module risers	14	PCI card slot (SLOT3) **NOTE:** This slot is not available in the dual-graphics configuration
2	*black* memory module connectors (DIMM_3-4) support memory modules only when no memory riser cards are installed; otherwise these must be left empty	15	PCI-Express x16 card slot (SLOT4)
3	hard-drive fan connector (FAN_HDD)	16	PCI card slot (SLOT5)
4	IDE drive connector (IDE)	17	PCI card slot (SLOT6)
5	front I/O panel connector (FRONTPANEL)	18	PCI-Express x8 card slot (SLOT7)
6	back LED connector	19	RTC reset jumper (RTCRST)
7	FlexBay connector (INT_USB)	20	battery socket (BATTERY)
8	main power connector (POWER1)	21	password jumper (PASSWORD)
9	SATA connectors (SATA0-5)	22	power connector (POWER2)
10	front USB connector (FRNT_USB)	23	floppy drive (DSKT)
11	front panel 1394 connector (FP1394)	24	card cage fan connector (FAN_CAGE)
12	PCI-Express x1 card slot (SLOT1) **NOTE:** This slot is not available in the dual-graphics configuration	25	primary processor (CPU)
13	PCI-Express x16 card slot (SLOT2)	26	processor fan connector (FAN1_CPU)

Power Supply (PSU) DC Connector Pin Assignments

DC Power Connector P1

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+3.3 VDC	Orange	+3.3 VDC	Orange
2	+3.3 VDC/SE	Orange	+3.3 VDC/SE	Orange
3	COM	Black	COM	Black
4	+5 VDC	Red	+5 VDC	Red
5	COM	Black	COM	Black
6	+5 VDC	Red	+5 VDC	Red
7	COM	Black	COM	Black
8	POK	Gray	POK	Gray
9	+5 VFP	Purple	+5 VFP	Purple
10	+12 VD DC/SE	Yellow/White	+12 VD DC/SE	Yellow/White
11	+12 VD DC	Yellow/White	+12 VD DC	Yellow/White
12	+3.3 VDC	Orange	+3.3 VDC	Orange
13	+3.3 VDC	Orange	+3.3 VDC	Orange
14	-12 VDC	Blue	-12 VDC	Blue
15	COM	Black	COM	Black
16	PS_ON	Green	PS_ON	Green
17	COM	Black	COM	Black
18	COM	Black	COM	Black
19	COM	Black	COM	Black
20	N/C	N/A	N/C	N/A

21	+5 VDC/SE	Red	+5 VDC/SE	Red
22	+5 VDC	Red	+5 VDC	Red
23	+5 VDC	Red	+5 VDC	Red
24	COM	Black	COM	Black

DC Power Connector P2

	1-KW Power Supply		**750-KW Power Supply**	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+12 VC DC	Blue/White	+12 VC DC	Blue/White
2	+12 VC DC	Blue/White	+12 VC DC	Blue/White
3	COM	Black	COM	Black
4	COM	Black	COM	Black
5	+12 VA DC/SE	Yellow	+12 VA DC/SE	Yellow
6	+12 VA DC	Yellow	+12 VA DC	Yellow
7	COM	Black	COM	Black
8	COM	Black	COM	Black
9	+12 VB DC/SE	White	+12 VB DC/SE	White
10	+12 VB DC	White	+12 VB DC	White
11	+12 VC DC/SE	Blue/White	+12 VC DC/SE	Blue/White
12	COM	Black	COM	Black
13	COM	Black	COM	Black
14	COM	Black	COM	Black
15	+12 VA DC	Yellow	+12 VA DC	Yellow
16	COM	Black	COM	Black
17	COM	Black	COM	Black
18	COM	Black	COM	Black
19	+12 VB DC	White	+12 VB DC	White
20	NC	N/A	NC	N/A

DC Power Connector P3 (Graphics Card)

	1-KW Power Supply		**750-KW Power Supply**	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+12 VE DC/SE	Blue/Yellow	+12 VB DC	White
2	+12 VE DC	Blue/Yellow	+12 VB DC	White
3	+12 VE DC	Blue/Yellow	+12 VB DC	White

4	COM	Black	COM	Black
5	COM	Black	COM	Black
6	COM	Black	COM	Black

DC Power Connector P4 (Graphics Card)

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+12 VE DC	Blue/Yellow	+12 VC DC	Blue/White
2	+12 VE DC	Blue/Yellow	+12 VC DC	Blue/White
3	+12 VE DC	Blue/Yellow	+12 VC DC	Blue/White
4	COM	Black	COM	Black
5	COM	Black	COM	Black
6	COM	Black	COM	Black

NOTE: The P3 and P4 connectors are intended for use with the PCI Express graphics cards whose power requirements exceed 75 watts.

DC Power Connector P5 (FD1)

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**22-AWG Wire Color**	**Signal name**	**22-AWG Wire Color**
1	+5 VDC	Red	+5 VDC	Red
2	COM	Black	COM	Black
3	COM	Black	COM	Black
4	+12 VE DC	Blue/Yellow	+12 VB DC	White

DC Power Connector P6 and P7 (BAY1 and Bay2)

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+12 VE DC	Blue/Yellow	+12 VB DC	White
2	COM	Black	COM	Black
3	COM	Black	COM	Black

4	+5 VDC	Red	+5 VDC	Red

DC Power Connectors P8 and P9 (HDD0 and HDD1)

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+3.3 VDC	Orange	+3.3 VDC	Orange
2	COM	Black	COM	Black
3	+5 VDC	Red	+5 VDC	Red
4	COM	Black	COM	Black
5	+12 VE DC	Blue/Yellow	+12 VB DC	White

DC Power Connectors P10-P13 (HDD2 and HDD5)

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+3.3 VDC	Orange	+3.3 VDC	Orange
2	COM	Black	COM	Black
3	+5 VDC	Red	+5 VDC	Red
4	COM	Black	COM	Black
5	+12 VE DC	Blue/Yellow	+12 VC DC	Blue/White

DC Power Connectors P14 (Peripheral)

	1-KW Power Supply		750-KW Power Supply	
Pin Number	**Signal name**	**18-AWG Wire Color**	**Signal name**	**18-AWG Wire Color**
1	+12 VB DC	White	+12 VA DC	Yellow
2	COM	Black	COM	Black
3	COM	Black	COM	Black
4	+3.3 VDC	Orange	+3.3 VDC	Orange
5	+5 VDC	Red	+5 VDC	Red
6	+12 VC DC	Blue/White	+12 VD DC	Yellow/White

DC Power Connector P15 (Graphics Card – 1-KW PSU Only)

Pin Number	Signal Name	18-AWG Wire Color
1	+12 VB DC	White
2	+12 VB DC	White
3	+12 VB DC	White
4	COM	Black
5	COM	Black
6	COM	Black

DC Power Connector P16 (Graphics Card – 1-KW PSU Only)

Pin Number	Signal Name	18-AWG Wire Color
1	+12 VC DC	Blue/White
2	+12 VC DC	Blue/White
3	+12 VC DC	Blue/White
4	COM	Black
5	COM	Black
6	COM	Black

NOTE: The P15 and P16 connectors are intended for use with the PCI Express graphics cards whose power requirements exceed 75 watts.

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Dell™ XPS™ M2010 Service Manual

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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Model PP03X

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Top Cover

Dell™ XPS™ M2010 Service Manual

- Removing the Top Cover
- Replacing the Top Cover

 CAUTION: Before performing the following procedures, follow the safety instructions in your *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Top Cover

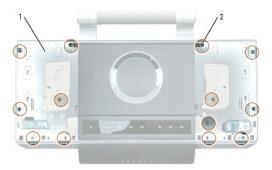
NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.

2. Turn the computer over and open the display (see Opening the Display).

3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.

4. Remove the cosmetic covers (see Removing the Cosmetic Covers).

5. Remove six M2.5 x 5-mm screws from the left side of the top cover and seven M2.5 x 5-mm screws from the right side of the top cover at the embossed arrows.

1	top cover	2	M2.5 x 5-mm screws (13)		

6. Lift the top cover a few inches and disconnect the optical drive cable from the system board by pulling up on the loop, and disconnect the media cable from the system board by pulling up on the connector.

   The media cable contains cables for the disk sensor, optical disk drive motor assembly, power button, MediaDirect button, multimedia board, and LED board.

1	top cover	2	optical drive cable	3	media cable

Replacing the Top Cover

1. While holding the top cover in one hand, connect the optical drive cable to its connector on the system board (JOD) and the media cable to its connector on the system board (JMEDIA).
2. Set the top cover in place and attach it to the computer with six M2.5 x 5-mm screws on the left side and seven M2.5 x 5-mm screws on the right side of the top cover at the embossed arrows.
3. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

4. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
5. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Video Card/Thermal-Cooling Assembly

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

Removing the Video Card/Thermal-Cooling Assembly

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Remove the right hard drive (see Removing a Hard Drive).
7. Disconnect the video cable from the video card by pulling up on the blue tab.
8. Loosen in consecutive order the four captive screws, labeled "1" through "4", that secure the video card/thermal-cooling assembly to the system board.

1	video card/thermal-cooling assembly	2	captive screws (4)	3	system board connector (JVGA)

NOTE: The video card is integrated with its thermal assembly. Do not remove the heatsink from the video card.

9. Pull the video card/thermal-cooling assembly straight up to disconnect the card from the system board.

Replacing the Video Card/Thermal-Cooling Assembly

1. Align the video card/thermal-cooling assembly over the connector and screw holes on the system board.

2. Press down on the "PUSH HERE" label on the video card/thermal-cooling assembly.

3. Tighten in consecutive order the four captive screws, labeled "1" through "4", on the video card/thermal-cooling assembly.

4. Connect the video cable to the connector on the video card.

5. Replace the right hard drive (see Replacing a Hard Drive).

6. Replace the top cover (see Replacing the Top Cover).

7. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

8. Firmly attach the keyboard to the computer and close the display (see Closing the Display).

9. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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Wireless USB Board

Dell™ XPS™ M2010 Service Manual

CAUTION: Before you begin the following procedure, follow the safety instructions in the *Product Information Guide*.

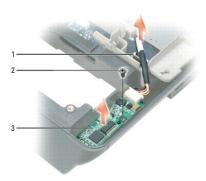
CAUTION: Only products approved for use in your portable computer may be installed.

 NOTICE: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface. If you leave the area, ground yourself again when you return to the computer.

The wireless USB board provides the wireless connection for the remote controller.

Removing the Wireless USB Board

NOTICE: To help prevent damage to the system board, remove the main battery before working inside the computer.

1. Follow the instructions in Before Working Inside Your Computer, including removing the system battery.
2. Turn the computer over and open the display (see Opening the Display).
3. Detach the keyboard by grasping the sides of the keyboard and pulling it straight out from the computer base. Set the keyboard aside.
4. Remove the cosmetic covers (see Removing the Cosmetic Covers).
5. Remove the top cover (see Removing the Top Cover).
6. Disconnect the wireless USB cable from the system board.
7. Remove the wireless USB board by removing the M2 x 3-mm screw.

1	wireless USB cable connector	2	M2 x 3-mm screw	3	wireless USB board

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Replacing the Wireless USB Board

1. Attach the new wireless USB board with the M2 x 3-mm screw.
2. Connect the wireless USB cable to the system board.
3. Replace the top cover (see Replacing the Top Cover).
4. Replace the cosmetic covers (see Replacing the Cosmetic Covers).

NOTICE: To avoid damage to the keyboard, ensure that you attach the keyboard securely before moving the computer.

5. Firmly attach the keyboard to the computer and close the display (see Closing the Display).
6. Turn the computer upside down and replace the system battery (see Replacing the System Battery).

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